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Indian Standard

PERFORMANCE GUIDELINES FOR QUALITY ASSURANCE IN HOSPITAL SERVICES UP TO 100-BEDDED HOSPITALS

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Hospital and Medical Care Services Sectional Committee, MSD 8

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Hospital and Medical Care Services Sectional Committee had been approved by the Management and Systems Division Council.

Health and medical care delivery systems in our country have come under constantly increased pressure due to increased utilization as a result of population explosion, increased awareness among common consumers, biomedical advancement resulting in the use of sophisticated and advanced technology in diagnosis and therapeutics, and constantly rising expectation levels of the users of these services.

Also the Government's commitment to the cause of the common consumer is amply reflected in the enactment of *Consumer Protection Act (COPRA)*, 1986. With the introduction of COPRA, the need for evaluating the care being rendered in retrospect has further gained strength. Until now, the quality of health care being provided by the health care organizations could not be subject to critical retrospective evaluation, as there were no checks or controls on the care being rendered and there being no predetermined standards or guidelines in this area. Today, a common consumer expects some sort of assurance that the services rendered should be of desired quality and cost effective.

There is an urgent need to provide guidance to those concerned with quality assurance in hospital services to ensure efficiency and effectiveness of the services rendered. In order to enable them to successfully manage the hospital to fulfil ever rising expectations of the consumers' in the present economic scenario, it is imperative that health care professionals should bring in certain standards in their respective areas of work so that quality of health care provided can be evaluated against laid-down norms or standards. Various functionaries, such as doctors, nursing and paramedical staff, hospital administrators, etc, should bear responsibility for any failure in the system, so as to make these services more effective, economical and accountable.

In contrast with the case of products, where the expected performance is often in terms of measurable attributes, the difficulty in case of services is that the customers' needs and expectations are quite often abstract. Notwithstanding this, a hospital keen to provide satisfactory service or to improve upon its present level of service, needs to evolve a suitable mechanism to identify the patient's needs and expectations, even if they are imprecise or vague. This may be done by communication with the users of the service, customer survey, etc. Such attributes, which are important for the patient's needs and requirements, may be identified. These attributes may be divided into two broad categories:

a) First relating to infrastructure, skills, procedures and systems, etc, which will ensure a satisfactory service at optimum cost. This is a prescription type of provision, adherence to which is expected to result in service of desired quality.
b) The second part comprises identification and quantification, wherever possible, attributes of quality which is a performance based provision. Successful achievement of these quality attributes is expected to provide necessary confidence to hospital management as well as users of these services.

At the district level, there is strong need felt, as to how a hospital up to 100 beds can provide better services to the consumers at large.

In spite of great demand, presently there is no guidance readily available on those attributes of quality which are absolutely performance based for hospital services. This standard is intended to fulfil this long-felt need. This standard lays down necessary guidelines on the performance requirements of hospital services and the system for their evaluation. It may be noted that these days many of the services like ambulance services, etc are being outsourced. It is reiterated that, the onus of control over such services still lies with the hospital(s).

The Model Citizens' Charter for Public Hospitals given in Annex C, has been provided by Voluntary Organization in Interest of Consumer Education (VOICE).

The composition of the Committee responsible for the formulation of this standard is given in Annex D.

Indian Standard

PERFORMANCE GUIDELINES FOR QUALITY ASSURANCE IN HOSPITAL SERVICES UP TO 100-BEDDED HOSPITALS

1 SCOPE

This standard covers guidelines for performance requirements for quality assurance in hospital services up to 100-bedded hospitals and the system for their evaluation.

2 REFERENCES

The standards given below contain provisions, which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent additions of the standards indicated below:

IS No.	*Title*
1474 : 1959	Commercial refrigerators
1475 (Part 1) : 2001	Self-contained drinking water coolers — Specification
1742 : 1983	Code of practice for building drainage (*second revision*)
2064 : 1993	Code of practice for selection, installation and maintenance of sanitary appliances (*second revision*)
2065 : 1983	Code of practice for water supply in buildings
2189 : 1999	Selection, installation and maintenance of automatic fire detection and alarm system — Code of practice (*third revision*)
2190 : 1992	Selection, installation and maintenance of first-aid fire extinguishers — Code of practice (*second revision*)
2309 : 1989	Code of practice for protection of buildings and allied structures against lighting
2379 : 1990	Pipelines — Identification — Colour code (*first revision*)
2440 : 1975	Guide for day lighting of buildings (*second revision*)
4347 : 1967	Code of practice for hospital lighting
5329 : 1983	Code of practice for sanitary pipe work above ground for buildings (*first revision*)
12377 : 1988	Classification and matrix for various categories of hospitals
12433	Basic requirements for hospital planning:
(Part 1) : 1988	Up to 30-bedded hospitals
(Part 2) : 2001	Up to 100-bedded hospitals
13808 (Part 3) : 1995	Quality management for hospital services up to 30-bedded hospitals — Guidelines
15195 : 2002	Performance guidelines for quality assurance in hospital services up to 30-bedded hospitals
15280 : 2003	Quality function deployment
15431 : 2004	Seven basic tools of quality management

3 TERMINOLOGY

For the purpose of this standard, the following definitions shall apply.

3.1 Customer — Organization or person that received a product.

Example : Consumer, client, end-user, retailer, beneficiary and purchaser.

NOTE — A customer can be internal or external to the organization.

3.2 Product/Service — Result of a Process

NOTE 1 — There are four generic product categories, as follows:

a) Services (for example, transport);
b) Software (for example, computer program, dictionary);
c) Hardware (for example, engine mechanical part); and
d) Processed materials (for example, lubricant).

Many products comprise elements belonging to different generic product categories. Whether the product is then called service, software, hardware or processed material depends on the dominant element. For example, the offered product 'automobile' consists of hardware (for example, tyres), processed materials (for example fuel, cooling liquid), software (for example, engine control software, driver's manual), and service (for example, operating explanations given by the salesman).

NOTE 2 — Service is the result of at least one activity necessarily performed at the interface between the supplier and customer and is generally intangible. Provision of a service can involve, for example, the following:

- an activity performed on a customer-supplied tangible product (for example, automobile to be repaired);
- an activity performed on a customer-supplied intangible product (for example, the income statement needed to prepare a tax return);
- the delivery of an intangible product (for example, the delivery of information in the context of knowledge transmission);
- the creation of ambience for the customer (for example, in hotels and restaurants).

Software consists of information and is generally intangible and can be in the form of approaches, transactions or procedures.

Hardware is generally tangible and its amount is a countable characteristic. Processed materials are generally tangible and their amount is a continuous characteristic. Hardware and processed materials often are referred to as goods.

NOTE 3 — Quality assurance is mainly focused on intended product.

NOTE 4 — Result generated by activities at the interface between the hospital/health care organization and the customer and the internal activities of the hospital/health care organization to meet the customers' needs and expectations.

4 GENERAL

4.1 In order to consistently provide the services of desired quality at optimum cost for providing effective and efficient patient-care services, a hospital management should develop, implement and continuously improve the quality management system. Such a system consists of organizational structure, procedures, processes and resources needed to implement the quality management.

4.2 The basic requirements up to 100-bedded general hospitals have been clearly defined in terms of infrastructure, personnel, material, etc, in IS 12433 (Part 2) which covers the physical facilities required for delivery of service to the patients. Some of the aspects of quality management system characteristics may not always be observable by the customer, but directly affect service performance.

4.3 The characteristics of hospital services in terms of infrastructure and systems form the starting point. The other set relates to quality considerations, which should follow thereafter. These may be quantitative (measurable) or qualitative (comparable). Hospital authorities against defined standards of acceptability should evaluate both these types of characteristics. Quality is generally expressed in terms of the following attributes:

a) *Availability* — The services shall be available to the patient whenever needed.
b) *Reliability* — The services shall be accurate and reliable, for example, if a blood sample is tested in a pathological laboratory, the values obtained shall be accurate and free from avoidable errors.
c) *Completeness* — The services rendered shall be complete in all respects. If a laboratory test is done for an in-patient but report not sent to the ward, it is not a satisfactory service because it is not complete.
d) *Timeliness* — Rendering the services in time is a very important consideration, which otherwise, may even cost a patient's life. The medical service, in order to be called as good quality or satisfactory, shall adhere to the time specified.
e) *Courtesy* — A hospital service is a highly personalized one and should be rendered with due courtesy and pleasant behaviour to the customer. A patient, while suffering from a disease, heaves a sigh of relief through courteous behaviour.
f) *Economy* — A hospital service should be provided to the patient at reasonable cost which is generally affordable.
g) *Consciousness* — A strong will to redress grievances and make good losses arising out of lapses in service is also an attribute of quality of services rendered.
h) *Other Considerations* — These may include confidentiality, hygiene considerations responsiveness, comfort, aesthetics of environment and effective communication and transparency particularly in costs and communications.

5 COMMUNICATION WITH CUSTOMERS

5.1 One of the major indicators of quality of health care services is the feedback received from patients. It is essential that such feedback percolates down the line to every employee in the hospital. Another major element in this service area is the concept of consideration. Usually, price is a very important concept in any industry and service. But in health care service area, price has been replaced by the element of consideration. Consideration is price plus loss of dignity, waiting time, anxiety, etc. The latest concept in management is that of customer delight. It has now become essential not only to ensure customer satisfaction but also to aspire for customer delight. Customer delight, for example, could mean that a receptionist is not merely courteous, but is warm, empathic and well trained in counselling.

5.2 Interface with Customers

5.2.1 Hospital management should establish and monitor effectiveness of interaction between customers and hospital person. This is crucial to achieve customer satisfaction.

5.2.2 Management can influence this perception by creating an appropriate image based on the reality of actions taken to meet customer needs. This image presented by personnel at all levels, has a primary effect on the hospital's relationship with the customer.

5.2.3 Personnel having direct customer contact are an important source of information for the ongoing quality improvement process. Management should regularly review the methods used for promoting contacts with customers.

5.2.4 Since health service is mainly people-oriented, prevention and reduction of human errors at all levels are of vital importance. This means that top priority shall be given to human resource development. Some common examples of waste, rework, negligence and error in patient care in hospitals are:

a) X-ray/investigation ordered but not done;
b) Prolonged stay before and after the operation;
c) Consultation indicated and not carried out;
d) Wrong label on samples;
e) Wrongly numbered reports;
f) Missing requisitions, reports, etc;
g) Inferior quality of drugs used;
h) Delayed reports;
j) Prescriptions not explained;
k) Medicine prescribed but not given by the nurse;
m) Incorrect patient identification; unnecessary and/or repetitive investigations;
n) Wrong diagnosis and treatment; and
p) Unnecessary and/or repetitive investigation.

5.3 Communication with customers involves listening to them and keeping them informed. Difficulties in communication or interaction with customers should be given prompt attention. These difficulties provide important information on areas for improvements in the service delivery process. Effective communication with customers involves:

a) Describing the service, its scope, its availability and timeliness of delivery;
b) Stating how much the service will cost;
c) Explaining the interrelationships between service, delivery and cost;
d) Explaining to customers the effect of any problem and how it will be resolved, should it arise;
e) Ensuring that customers are aware of the contribution they can make to service quality;
f) Providing adequate and readily accessible facilities for effective communication; and
g) Determining the relationship between the service offered and the real needs of the customer.

The customers' perception of service quality is acquired often through communication with the service organization's personnel and facilities.

5.4 The control of service and service delivery characteristics should be achieved by controlling the process that delivers the service. Process performance measurement and control are, therefore, essential to achieve and maintain the required service quality.

5.5 In the delivery of health care services, a citizen's charter for public hospitals may be made available at all times for better communication. A model citizen's charter is given in Annex C.

6 IDENTIFYING RELEVANT INFORMATION AND DATA

6.1 It is important to identify and analyze the relevant information data, which may involve:

a) Giving priority to those activities having the greatest adverse impact on service quality;
b) Providing feedback of results of the analysis to operational management with recommendation for immediate service improvement;
c) Reporting periodically to senior management for a management review of long-term quality improvement recommendations; and
d) Admission and discharge analysis of the patients (monthly statistical report).

6.2 Members from different parts of the service organization working together may be able to offer fruitful ideas that could be directed towards improving quality and reducing cost. Management should encourage personnel at all levels to contribute to programmes for quality improvement, with recognition for their efforts and participation.

7 PERFORMANCE REQUIREMENTS

7.1 Parameters have to be identified which describe the performance of each activity of the work phase. These parameters should relate to the quality of patient care activity and should be associated with the appropriate type of service required.

7.2 In order to define standards of acceptable performance, the value of each parameter needs to be specified in terms of both the acceptable level and allowable tolerances.

7.3 Customer's needs and expectations from various activities of hospital services should be kept in mind while laying down various quality parameters. Some of these customer satisfiers are given below:

a) Patients should get cured;
b) Curing should be done in the shortest possible time

and at the optimum cost;
- c) Cure should be lasting;
- d) Psychologically the patients should feel that they are cared for and being treated well;
- e) The hospital environment should be clean and appealing;
- f) The environment should prevent the spread of diseases to others including doctors, nurses and other patients;
- g) Emergencies should be attended to promptly; and
- h) Life saving measures should be taken in minimum time.

7.4 Parameters — General Performance

Some pertinent parameters include the following.

7.4.1 *Reception and Registration*

- a) Courteous response,
- b) Information provided, and
- c) Guidance need anticipated and provided.

7.4.2 *Staff Service*

- a) Courtesy,
- b) Comfort, and
- c) Promptness.

7.4.3 *House-Keeping and Sanitation*

- a) Cleanliness and hygiene,
- b) Safe and effective disposal of biomedical waste, and
- c) Linen and laundering.

7.4.4 *Hospital Infection Control,* Qualitative indicator.

7.4.5 *Patient Management Team*

- a) Doctor,
- b) Nurse,
- c) Allied health professionals and para medicals,
- d) Technicians, and
- e) Attendants.

7.4.6 *Medical Facilities*

- a) ECG,
- b) EEG (Optional),
- c) X-Ray,
- d) Pathological services,
- e) Sonography,
- f) Blood bank,
- g) Physiotherapy and occupational therapy,
- h) Essential drugs, and
- j) Others.

7.4.7 *Other Facilities*

- a) Canteen,
- b) Laundry,
- c) Kitchen,
- d) Drinking water,
- e) Chemist shop,
- f) Waiting space for patient's relatives,
- g) Public relation and social work,
- h) Horticulture and landscaping,
- j) Parking facility,
- k) Manifold services,
- m) Library,
- n) STD/ISD and internet facilities, and
- p) Light music/Cable TV.

7.4.8 *Follow-up Care*

7.4.8.1 *Hospital indices — quantitative*

- a) Bed occupancy rate,
- b) Average length of stay,
- c) Hospital death rate,
- d) Hospital acquired infection rate,
- e) Number of admissions,
- f) Number of discharge on non-medical grounds, and
- g) Number of LAMAs (Left Against Medical Advice).

7.4.9 *Functional Areas in a Hospital Up to 100 Beds*

- a) Entrance and Ambulatory Care Area,
- b) Critical care area (Emergency services),
- c) Diagnostic services,
- d) Intermediate care area,
- e) Intensive care area,
- f) Therapeutic services,
- g) Hospital services,
- h) Engineering services, and
- j) Administrative/Ancillary services.

7.5 Entrance Area and Ambulatory Care Area

Ambulatory care is being provided in the Out Patient Department of the hospital. It is the first place where the sick and their relations come in direct contact with the hospital. It provides primary and comprehensive health care for ambulatory patients who come for diagnosis, treatment and follow-up care.

7.5.1 *Infrastructure with Medical Equipment and Instruments*

- a) Infrastructure for Ambulatory Care Area should be in conformance with the norms given in IS 12433 (Part 2), that is, 9.31 m^2/bed and also as per Annex A of IS 12433 (Part 2).
- b) Equipment, instruments and furniture required by this department should be in conformance with the norms given in Section 6 of IS 12433 (Part 2). However, the number of these shall be governed by the actual local needs. In addition to the above, the items required to be made available are as under:

1) ECG machine,
2) Nebulizer,
3) Cardio pulmonary resuscitation kit (mobile unit),
4) Dark field microscope/ordinary microscope,
5) Dermal curette,
6) Electrocautery,
7) Instruments for micro graft,
8) 4X to 10X lens with stand,
9) Wood's stand,
10) Skin biopsy punch (disposable) various sizes,
11) Nail extractor and dissector,
12) Molluscum curette extractor of various sizes,
13) Thermometer,
14) Knee hammer,
15) Tape measure,
16) ENT diagnostic set (complete),
17) Bull' eye lamp,
18) Tuning forks,
19) Head mirror,
20) Clinical diagnostic pure tone audiometer,
21) Laryngoscopic mirrors,
22) Rhinoscopic mirrors,
23) Suction cannula (different sizes),
24) Weighing machine (Adult),
25) Weighing machine digital (paediatric),
26) Television with VCR,
27) Aversion therapy apparatus,
28) Cot for hypnotherapy,
29) Orthopaedic fracture table,
30) Spica table,
31) Plaster cutters,
32) Splints of various types,
33) Traction kits of various types,
34) Slit lamp bimicroscope with Applantion tonometer,
35) Automated perimeter,
36) Retinoscope,
37) Refraction set,
38) Dosimeter,
39) PEFR meters (Peak flow meter),
40) Spirometry,
41) Bronchoscope with accessories, and
42) Gynecological examination table.

7.5.2 *Physical Facilities*

a) Out patient department (ambulatory care area) should be a separate wing segregated from inpatient department.
b) It should be easily accessible from the main entrance of the hospital and preferably in the ground floor.
c) It should also be easily approachable to the diagnostic and support services.
d) There should be adequate number of wheel chairs and stretchers in out patient department.

7.5.3 *Five Main Parts of the Functional Zones of the Ambulatory Care Area*

7.5.3.1 *Public zone or entrance zone*

This zone is mainly used by patients and their attendants. The main functional areas of this zone are as under:

a) Parking Area:
   1) The parking area for the vehicles should be near the main entrance of the hospital.
   2) A proper parking area should be earmarked so that no encroachment shall take place near the entrance.
   3) A separate area for physically challenged persons should be earmarked at a convenient location.
b) Entrance Hall and Waiting Space:
   1) From the main entrance to the entrance hall porch and slip proof ramps preferably with gradient of 1 : 20 should be built for physically challenged patients/visitors.
   2) Entrance hall serves as a waiting area for the patients and their attendants before registration.
   3) Waiting space must have proper sitting arrangements with ceiling fans and provisions for drinking water, telephone booth, snack bar, toilets separate for ladies and gents and any other as per the local need. One toilet each for males and females to be provided for first 200 patients and/or visitors followed by one each for every 100.
   4) This waiting area should be adjacent to the registration counter.
   5) This area must have a display board indicating about the clinics provided, room numbers of the clinics and other services, days and timings of the various clinics, etc.
c) Reception, Enquiry and Registration:
   1) This area should be located near the entrance.
   2) Railings should be provided for separate queues, that is , new patients and old patients, male and female.
   3) Number of registration desks will vary with patient load but each desk should be able to handle 12-30 patients per hour.
d) Room for Medico-social Worker:
   In meeting the problems of patients whose needs may be aggravated by social factors, the medico-social service is an essential aspect of the hospital. A room should be allocated in the outpatient area to the medico-social worker.

7.5.3.2 *Ambulatory or joint use zone*

This is the zone where patients and their attendants come in direct contact with the hospital staff. The various functional areas of this zone are as under:

a) Clinics for Various Medical Disciplines:
   1) Clinics for various disciplines/specialties should have sufficient number of consultation-cum-examination rooms.
   2) The clinics/disciplines provided in the outpatient area is as per IS 12377. These clinics are – medical, surgical, ophthalmology, oto-rhino-laryngology, obstetrics and gynecology, pediatric, orthopaedic, family welfare, dermatology and STD (optional), psychiatric (optional) and neonatology (optional).
   3) Pediatric clinic should be isolated from other clinics.
   4) Orthopaedic clinic should be in close proximity to the radiology and accident and emergency department, which shall help, in minimum circulation and maximum use of equipment.
   5) Right from the registration counter patients should be guided to the required clinic with the help of proper signage system and for illiterate persons the same is done by colour codes and diagrams.
   6) Every clinic should have sub-waiting area for the patients and their attendants.
   7) Every clinic should have a calling device for summoning the next patient.
   8) Proper lighting and ventilation should be provided in the examination room. The illumination should not be less than 500 lux.
b) Treatment Room:
   1) This room should be provided for dressing and for administering injections. These functions should be done in separate rooms if the workload is high.
   2) There should be a separate treatment room for immunization and should be located in the pediatric outpatient area.
   3) Treatment room for fractures should be big enough to have dressing couch, spica table and mobile X-ray unit.
   4) Separate treatment room should be allocated to the family welfare clinic for IUCD insertion and other diagnostic procedures.
   5) Treatment room for dermatology and STD clinic should also be separate and specially for leprosy cases.
c) Pharmacy:
   1) The dispensary should be located in an area easily accessible from the clinics and near the exit.
   2) For every 200 patients there should be one drug-dispensing counter with tracks.
   3) The dispensary should have enough space for storage of drugs.
   4) Adequate stock of drugs should always be available in the drug store of the out patient department.
d) Minor Operation Theater:
   Area for minor operation theater should be allocated near surgical clinic for minor surgical procedures.
e) Plaster Room:
   1) Plaster room should be adjacent to orthopaedic clinic.
   2) Plaster room should have space for plaster preparation, spica table and mobile X-ray unit.

7.5.3.3 *Diagnostic and supportive zone*

The various functional areas of this zone are as under:

a) Central Specimen Collection Center:
   This is the area where all the specimens to be examined are collected. After collecting these specimens they are further sorted out and sent to the respective laboratories.
b) Clinical Laboratory:
   There should be a provision for a small clinical laboratory for providing support facilities to the clinics where immediate result is required for diagnosis/treatment.
c) Imaging Section:
   Area should be allocated for this facility, which includes X-ray and ultrasound thus providing support services to all the clinics.

7.5.3.4 *Administrative zone*

The out patient department requires an administrator for planning, organizing, supervising, evaluating, coordinating and improving the services being provided. The various functional units of this zone are as under:

a) Office of the OPD In-charge:
   A senior person of the rank of Chief Medical Officer should be the in-charge of the out patient department and shall look after the day-to-day functioning of the OPD.
b) Nurses Station for Administrative Control:
   This should oversee the general waiting area. It should have full inter-communication with the entire department and with other departments of the hospital.
c) Cash Counter:
   Payments for OPD tickets, consultation, various investigations and other services may be made at this place.
d) Medical Record Room:
   1) The location of the record room should be in continuation of the registration area, and
   2) Maintaining of records for medico-legal cases related to OPD is mandatory.

7.5.3.5 *Staff zone*

The staff members exclusively use this zone. The various functional units of this zone are as under:

a) Duty Rooms:

There should be separate duty rooms for doctors and nurses. These rooms must have attached toilets and an area for preparing tea/coffee, etc.

b) Stores:

There should be separate store for drugs, equipment and linen. This store should not be shared with any other department.

c) House Keeping:

Every floor should be provided with Janitor closet for house keeping and cleaning materials.

d) Conference/Seminar Room

7.5.3.6 *Selection of patients*

All patients coming to the out patient department should be attended to but if the hospital/organization has its own referral policy then action may be taken accordingly.

7.5.3.7 *Medical care*

a) Adequate number of medical staff should be posted in the outpatient clinics as per norms and standards.
b) Medical staff preferably qualified in the specialty concerned should be posted in the outpatient clinics.
c) Medical staff should be physically present in their respective clinics during the OPD hours.
d) Medical records on diagnosis, investigations advised, outcome of various investigations and the management or treatment advised should be clearly mentioned on the OPD tickets.
e) Medical staff must maintain punctuality.
f) Behaviour of medical staff with patients and their attendants must be empathetic and courteous. Patient's satisfaction in this regard may be done through continuous evaluation and rectify the bottlenecks from time-to-time.

7.5.3.8 *Nursing care*

a) Nursing station should be functional, efficient and effective.
b) All the nursing staff posted in the out patient department should be physically present at their respective place of duty.
c) Nursing in-charge should supervise, guide and control the nursing and other supportive staff working under them.
d) Supervise the housekeeping activities involving maintenance of clean, safe and comfortable environment in the outpatient area.
e) Nursing in-charge should initiate the process of maintenance and repair of various instruments and equipment used in the out patient department.
f) Life saving drug trays should always be readily available.
g) Optimum stock of life saving drugs, dressings, linen, stationery items, house-keeping items, certain equipment like sphygmomanometer, stethoscope, torch, etc, should be available.
h) Behaviour of nursing staff with patients and their attendants must be empathetic and courteous. Patient's satisfaction in this regard may be done through continuous evaluation and rectify the bottlenecks from time-to-time.
j) Maintenance of nursing record as per standard protocol.
k) Standard (Universal) precautions should be practiced.

7.5.3.9 *Ancillary care*

a) Transportation of patients to any service area should be safe, comfortable and timely.
b) Security and safety of patients, their attendants and staff should be ensured by the hospital administration.
c) Storage and serviceability of equipment, instruments, supplies and drugs should be as per laid down procedures.
d) Attitude of support care staff should be helpful, courteous and sympathetic towards the patients and their attendants.

7.5.4 *Performance Parameters in Critical Care Area (Emergency Services)*

7.5.4.1 *Infrastructure with medical equipment and instruments*

a) Infrastructure for critical care area should be in conformance with the norms given in IS 12433 (Part 2), that is, 4.69 m²/bed and also as per Annex A of IS 12433 (Part 2). As far as infrastructure parameters are concerned, the following points are to be considered:
   1) It should be near the main entrance of the hospital easily visible from a distance.
   2) Critical care area should have a distinct entry independent of out patient department so that minimum time is lost in giving treatment to the casualties arriving in the hospital.
   3) It should be housed in the ground floor of the hospital.
   4) There has to be easy accessibility with out patient department and radiology department.
   5) It should have ready access to the acute patient

care areas like operation theater, intensive care unit and obstetrics unit.
6) The blood bank, clinical laboratories, X-ray unit, record department and mortuary should be nearby.
7) Ambulance port should be of drive through type, covered and enclosed to protect patients during transfer from ambulance to the critical care area.
8) Entrance for ambulant patients and those on stretchers should be separate and at least 1.6 m wide.
9) It should have easy access to pedestrian and vehicular traffic.
10) Directional signs to the critical care area should be unmistakably marked and clearly visible day and night.

b) Equipment, instruments and furniture required by this department should be in conformance with the norms given in Section 6 of IS 12433 (Part 2). However, the number of these shall be governed by the actual local needs.

7.5.4.2 *Physical facilities*

a) The main entrance of the emergency department should have porch and slip proof ramp.
b) The entrance lobby should have a trolley, wheel chair and stretcher bay, general waiting area with public utilities.
c) Patients' relatives should not be allowed in the work areas of the emergency department.
d) The general waiting area can be used for triage of the patients during mass casualties. It should be easily accessible from the entrance. The hospital should have a sound policy to create space for accommodating the patients of mass casualties in the critical care area.
e) Reception area of the emergency department should have an enquiry counter with queuing tracks.
f) Near the entrance area there should be provision for a chemist shop and snack counter.
g) There should be a control room of the size of 10 m^2 near the entrance hall preferably with attached toilets for ambulance drivers/attendants, security, police and fire.
h) Nursing station and asdministrative office should be close to entrance area. Multiple telephones, bulletin board with roster of doctors and directives pertaining to the emergency department should be displayed.
j) Nursing station should be well stocked with emergency drugs and supplies.
k) Life saving drug tray should always be readily available.
m) Examination and treatment area should consist of a large room and a number of smaller rooms for examination and treatment. It must have provisions for resuscitative measures.
n) Resuscitation room housed with all resuscitative equipment must be made near the examination and treatment area for stabilizing serious patients.
p) The open emergency room should not be smaller than 7.0 m × 13.5 m with door 1.3 m wide.
q) An observation ward of about 6-8 beds where patients should be kept under observation overnight but not more than 24 h should be a part of critical care area. The observation ward should have a nursing station and drugs/supply store.
r) A separate room should be reserved for burns patients.
s) There should be provision for an operation theater for both major and minor surgeries depending upon the situation.
t) There should be an isolation room for infectious patients or patients who require reverse isolation (for HIV patients).
u) Depending upon the local needs certain rooms should be provided. These are rooms for doctor incharge, storage space, utility and soiled linen room, cleaners room – house-keepers room, changing room, duty/retiring rooms, room for dead bodies and seminar room-cum-reference library.
v) Provision of a locker room specially for keeping belongings of unconscious or medico-legal cases.
w) Critical care area should be provided with adequate lighting and power supply with standby generators with capacity as per load.
y) Communication system of this department with other areas of the hospital must be very sound and effective.

7.5.4.3 *Human resources*

Manpower requirement in respect of doctors and other technical and supportive staff should be as per Section 5 of IS 12433 (Part 2).

Requirement of nursing staff should be as per Annex C of IS 12433 (Part 2).

7.5.4.4 *Selection of patients*

All casualties coming to emergency department must be attended immediately including all medico-legal cases.

7.5.4.5 *Medical care*

a) Medical personnel posted in the emergency department should be available round the clock.
b) All the doctors posted in this department should be trained in emergency medicine and resuscitation of patients.

c) Medical records on diagnosis, investigations advised, outcome of various investigations and the management or treatment advised should be clearly mentioned on the emergency tickets.
d) Medial records in respect of medico-legal cases must be carefully made and the MLC register should be kept under lock and key.
e) All the personnel working in the emergency department must work as a team for management of patients.
f) Medical stäff should maintain punctuality.
g) Behaviour of medical staff with patients and their attendants must be empathetic and courteous. Patient's satisfaction in this regard may be done through continuous evaluation and rectify the bottlenecks from time-to-time.

7.5.4.6 *Nursing care*

a) Nursing station should be functional, efficient and effective.
b) All the nursing staff posted in the emergency department should be available round the clock at their respective place of duty.
c) Nursing in-charge should supervise, guide and control the nursing and other supportive staff working under them.
d) Supervise the house-keeping activities involving maintenance of clean, safe and comfortable environment in the critical care area.
e) Nursing in-charge should initiate the process of maintenance and repair of various instruments and equipment used in the out patient department.
f) Life saving drug trays should always be readily available and should be checked on a daily basis.
g) Optimum stock of life saving drugs, dressings, linen, stationery items, house-keeping items, certain equipment like sphygmomanometer, stethoscope, torch, etc, should be available.
h) Behaviour of nursing staff with patients and their attendants must be empathetic and courteous. Patient's satisfaction in this regard may be done through continuous evaluation and rectification of the bottlenecks from time-to-time.
j) Maintenance of nursing record should be as per standard protocol.

7.5.4.7 *Ancillary care*

a) Transportation of patients to any service area should be safe, comfortable and timely.
b) Security and safety of patients, their attendants and staff should be ensured by the hospital administration.
c) Storage and serviceability of equipment, instruments, supplies and drugs should be as per laid down procedures.
d) Attitude of support care staff should be helpful, courteous and sympathetic towards the patients and their attendants.

7.6 Performance Parameters in Diagnostic Services

7.6.1 *Laboratory Services*

a) *Information, registration and receipt of samples:*
Information, Registration, receipt and labelling of samples should be done within 3-5 minutes.
b) *Storage and transportation of samples:*
Storage of samples should be at 4 to 8°C room temperature, depending upon type of samples (like blood, urine, body fluids, tissue etc).
Transportation of samples should be done in appropriate covered containers. The guidelines for storage and transportation should be available in laboratory.
c) *Processing of sample:*
Time taken to process the sample should be limited to ½ to 2 h depending upon type of investigations.
d) *Despatch of report:*
Facilities for early despatch report of urgent and emergency cases should be made available. Despatch of routine reports should be done on the same day. Provision of Computerized despatch and retrieval services is preferable.
e) *Number of samples/workload:*
Laboratory should be able to handle at least 150 routine tests apart from having arrangement for specialized tests.
f) *Techniques used for investigations:*
Availability of automated/semi-automated equipment are preferred. Techniques used for investigation as well as reports should be displayed on working tables as far as possible.
g) *Quality control:*
Internal and external quality control programme should be specified and practiced. Regular calibration and maintenance of the equipment should be carried out and history sheet of equipment should be maintained. Standardized reagent, kits and chemicals should be used.
h) *Reports recording, Indexing:*
A proper legible record of all reports should be maintained and indexed in specific registers.
j) Availability of 24 h Emergency lab services should be ensured.
k) General cleanliness of laboratory.
m) General instructions of cleanliness should be followed.
n) Laboratory waste disposal schedule should be strictly followed as per guidelines of Government.
p) Laboratory services should preferably be comput-

erized providing accessibility of laboratory information to all the users.

q) Standard (Universal) precautions should be practiced with special references to blood and body fluids.

7.6.2 *Imaging Diagnostic Service*

a) *Proper information should be displayed. Information receipt of requisition and registration* : Receipt of requisition and registration should be done promptly and preferably in less than ten minutes.
b) *Number of radiographs/ultrasound* : Availability of equipments (X-ray/USL) for handling 60-70 number of X-ray/ the workload of ultrasound investigations per day.
c) *Utilization of radiographic films* : Proper record of utilization of radiographic films should be maintained. This should also include a record of overexposed/under-exposed or repeat films for each case.
d) *Radiation protective devices* : Proper use of radiation protection measures and safety devices should be ensured for the staff as well as patients.
e) *Record of exposure counter reading for X-ray tube* : Record of exposure counter reading of X-ray tube should be properly monitored with a view to planning preventive maintenance of the machine as per manufacturer's instruction/manual. Further, record of exposure of personnel to radiations should be maintained (Dosimeter reading sent by BARC).
f) Fixing and developing of X-ray films should be preferably automatic and done according to laid down procedure and guidelines.
g) *Ultrasound Norm – PNDT Act* : Ultrasound facilities should address the provision of (pre-natal sex determination test) PNDT- Act guidelines. Appropriate records of all Ultrasounds done should be maintained.
h) *Reporting and despatching of X-ray reports* : The required time for reporting and despatching of X-ray reports should be less than one hour for emergency cases and on same day for routine cases.

7.6.3 *ECG Services*

a) *Receipt of ECG demand and registration* : Time required for receipt and registration of ECG demand should be less than five minutes.
b) *Recording, reporting and despatch of ECG reports* ECG Tracing should be taken in 10 minutes and handed over to patient/despatched immediately. Procedure should take less than ten minutes.
c) *Maintenance of ECG machine* : Preferably maintenance should be carried out to ensure minimal downtime.
d) A lady attendant for ECG should be provided.

7.6.4 *Blood Transfusion Service*

a) *Information, receipt of demand and registration for requisition of blood demand* : Receipt and registration of requisition for blood should be done within 10 min. Blood transfer should conform to the provision of *Blood Transfusion Act*. Information regarding facilities and the broad policy of the blood bank together with general information for the patients/attendants should be readably available and prominently displayed.
b) *Selection of donor* : Selection of donor should be done according to the notified criterion. These criteria should be available. The entire selection procedure should take less than 30 min.
c) *Collection, grouping and cross matching of blood* This should be done within 45 min as per laid down procedure.
d) *Mandatory screening of blood donor* : Mandatory screening of blood donor for safety measures for testing Hepatitis B and C, VDRL, HIV and Malaria should be completed in less than two hours.
e) *Blood Storage* : Blood bank should have refrigeration capacity for a min of 25 bags with the facility for temperature control, humidity and alarm system.
f) *Issue procedure* : Blood which has already been screened and stored should be issued within 20 min after grouping and cross-matching. It should be ensured that correct blood in good condition is issued. Proper record of requisition, blood collection screening and issuing should be maintained.
g) *List of voluntary donors* : Voluntary donors along with this addresses and telephone numbers and blood group should be readily available.

7.7 Intermediate Care Areas

The intermediate care areas (more commonly known as wards) may be categorized into:

a) *General wards* : The traditional type of wards, where not so critically ill patients are attached for continuous care or observation.
b) *Specialized wards* : Wards for the patients who require some specific/specialized type of care.
c) *Private Wards* : Most of these wards are pay wards where the patients enjoy more privacy with some extra facilities.

By and large, wards should be situated at a place away from the general crowded places that ensures quietness.

7.7.1 *Infrastructure*

Infrastructure for the Intermediate care area should be in conformance with the norms of inpatient services as given in IS 12433 (Part 2).

7.7.1.1 *Physical facilities*

Patient holding area — Availability of space per bed should be according to IS 12433 (Part 2). General cleanliness and maintenance should be according to satisfactory level of acceptance so as to prevent any hospital acquired infection. Also it should be away from general crowd of other busy areas of hospital.

The wards should be planned in such a way so as to minimize the nurse fatigue factor.

7.7.1.2 *General ward facilities*

Each ward unit should have following functional areas:

a) *Nursing station* :
It should be positioned in such a way that the nurses can continuously monitor the patients. The room should contain a cupboard to hold materials, which might otherwise be placed in clean utility room, a drug cupboard, sink, chair, small table and space for all system points and records. Separate toilet facilities for staff should be provided.

b) *Ward pantry* :
For collection and distribution of meals and preparation of beverages, a ward pantry should be provided. It should be fitted with a hot-water supply geyser, refrigerator and hot case and should have the facilities for storing cutlery, etc.

c) *Ward store* :
A store should be provided for storing the weekly requirements of hospital linen and other ward equipments.

d) *Treatment room* :
Major dressing and complicated treatments should be carried out in the treatment room to avoid the risk of cross-infection.

e) *Sluice room* :
A room, should be provided for emptying and cleaning bed pans, urine bottles, sputum mugs, disposed of used dressing and similar material, storage of stool and urine specimen, etc.

f) *Patient conveniences (Sanitary requirements)* :
Toilet for an individual room (single or two bedded) in a ward unit shall be 3.5 m^2 to comprise a bath, a WC in separate cubicle and a wash basin. For multiple beds of a ward unit, requirement of fitments are given below.

g) *Ancillary room* :
Ancillary room for doctors, nurses and supporting staff should be well maintained and functional.

Item	*Numbers Required*
Water closets	1 for every 8 beds or part thereof (male) 1 for every 6 beds or part thereof (female)
Ablution taps	1 for each water closets plus 1 water tap with drainage arrangement in the vicinity of water closets
Urinals	1 for every 12 beds or part thereof (for male only)
Wash basins	1 for every 12 beds or part thereof
Baths	1 bath with shower for every 12 beds or part thereof
Bed pan washing sinks	1 for each ward in dirty utility and sluice room
Cleaner's sinks and sinks/slab for cleaning mackintosh	1 for each ward in dirty utility and sluice room
Kitchen sinks and dishwashers	1 for each ward in ward pantry

One toilet may be provided for the physically challenged persons.

7.7.1.3 *Medical instruments and equipment*

Medical instruments and equipment should be available in working condition.

7.7.2 *Human Resources*

Availability of human resources 'namely' doctors, nursing staff, supporting staff and others according to IS 12433 (Part 2) should be ensured.

7.7.3 *Medical Care*

a) The first medical examination and management of every admitted patient should be done as soon as possible but not exceeding one hour. However, the admitting physician, particularly for emergency admissions, should always advise initial management.

b) There should be comprehensive and accurate record keeping of every patient admitted indoor, particularly for the records of the provisional clinical diagnosis, investigations requested and management advised and initiated at the time of first evaluation. Up-to-date medical record should be available at any given time [(*see* IS 13808 (Part 3)].

c) Periodicity of visits of medical staff during the hospitalization of patient — should be at least once a day. It should be in accordance with the type of sickness and its management. Each visit and observations should be recorded in patient's case sheet with date and time.

d) Behaviour of medical staff with patient and employees shall be communicative, sympathetic and courteous. Continuous evaluation of patient's satisfaction, through exit opinion poll and employees; interpersonal relationship should be carried out (*see* Annex A).

7.7.4 *Nursing Care*

a) *Reception of patient in the ward* :
Patient should be received with courtesy and warmth. All documentation including patient's consent shall be carried out as per hospital Standard Operating Procedures (SOP). Freshly prepared bed shall be made available to the patient immediately on arrival in the ward but not later than 15 minutes. The patient shall be made comfortable.

b) *Administration of oral/parental drugs* :
It should be administered as per schedule and prescription of medical staff and proper records shall be maintained.

c) *Organisation of diagnostic investigation* :
Timely and proper collection of samples for investigation, their transportation to respective laboratories, receiving and filing the reports in respective patient's medical record should be ensured.

d) *Monitoring of vitals* :
Monitoring of vital parameters of the patient should be done routinely, at least every 4 h or as per medical advice. This should be recorded simultaneously.

e) *Monitoring fluid levels* :
Record of I.V. fluid administration and, where advised, intake and output charts shall be maintained and available.

f) *Basic nursing procedures* :
It shall be ensured as per laid down standards (as per standard precautions).

g) *Supervision of support service staff* :
Support service staff attached to the ward should be properly scheduled and supervised so as to meet patient care needs in the ward. This should be monitored through duty rosters and staff movement records.

h) *Behaviour of nursing staff* :
Nursing staff should be courteous, helpful and sympathetic to the patients' needs. Continuous evaluation of patient's satisfaction through exit opinion poll (*see* Annex A) and employees' interpersonal relationship should be carried out.

j) *Maintenance of nursing record* :
It should be maintained as per standard protocol.

7.7.5 *Ancillary Care*

a) *Personal assistance to the patient* :
Need based assistance to the patient should be given by appropriate staff and its evaluation should be done in exit-poll analysis (*see* Annex A).

b) *Transportation of patient to other service areas* :
It should be safe, comfortable and timely. The nursing staff should monitor the patient's movement records and services received.

c) *Provision of appropriate linen* :
Linen should be changed at least thrice a week.

d) *Provision of diet* :
Diet should be in accordance with therapeutic advice, as per time schedule and served in a pleasant and courteous manner. Continuous evaluation of patient's satisfaction through exit opinion poll (*see* Annex A) should be carried out.

e) *Security and safety* :
Security and safety of patients and staff should be ensured by hospital administration. The safety and security implies physical safety and safety of property of patient and hospital and it should be ensured as per laid down procedures.

f) *Storage and serviceability* :
The provision for storage and serviceability of essential equipment and essential drug should be done as per laid down procedures. It should be monitored as per the patient drug administration record and service record of equipment/ledgers.

g) *Attitudes of supporting care staff* :
It should be courteous, helpful and sympathetic to the patient's need.

7.8 Performance Parameters and Norms for Intensive Care Unit (ICU)

7.8.1 *Infrastructure with Medical Equipment and Instruments*

Infrastructure for ICU should be in conformance with the norms as given in IS 12433 (Part 2). Along with that the following equipment and instruments should also be available in proper working condition:

a) Basic resuscitation equipment including defibrillator,
b) Cardiac monitors and ECG machines,
c) Ventilators (minimum of one for 2 beds),
d) Adequate O_2 cylinders/O_2 Concentrator,
e) Medical gas supply with minimum number of simultaneously accessible gas outlets per bed for oxygen, air and vacuum,
f) Suction apparatus (one for two beds),
g) 10-20 Electrical sockets,
h) Back up generator of at least 1.5 kVA/UPS for critical care equipment,
j) Pulse oxymeter,
k) Gas analyzer (optional),
m) Isolation room (optional), and
n) A/C with temperature 22-26°C and humidity of 40-60 percent.

7.8.2 *Physical Facilities*

a) Patient holding area for 2 to 6 beds with temporary partitions. Availability of space per bed should be according to IS 12433 (Part 2), that is, 10.5 m^2/bed.
b) Fowler's bed with low head end alongwith provision for railing on either side.
c) Strict measures should be taken to control Hospital acquired infection, that is, strict adherence to standard precaution procedures.
d) Clean and properly disinfected urine pots and bedpans for each bed.
e) Janitor closet and toilets should be kept absolutely clean, hygienic and functional.
f) Nursing Station should be strategically located so that it can oversee all the beds simultaneously.
   1) It should be functional, efficient and in effective condition.
   2) Life saving drug trays should always be readily available.
   3) Optimum stock of all life saving drugs should be available in ICU.
g) Ancillary room for doctors, nurses and supporting staff should be well maintained and functional.
h) Waiting area for patient attendant and relatives with drinking water and proper and clean toilet facilities.
j) Essential information regarding patients to be put on display board outside ICU.

7.8.3 *Human Resources*

a) *Nursing staff*— Highly experienced and motivated nursing staff to be deployed as per the norms given by Nursing Council, that is, one nurse per bed round the clock basis.
b) Other human resources like doctors and supporting staff should be according to IS 12433 (Part 2).

7.8.4 *Selection of Patient for Admission and Discharges*

Hospital should have a sound policy for the selection of patient for ICU for the purpose of admission and discharge.

7.8.5 *Medical Care*

a) Trained and qualified medical personnel should be physically available in the ICU round the clock.
b) Patient to be evaluated by the clinician as soon as possible after admission.
c) The admitting Clinician should always advise initial management.
d) Medical records of provisional diagnosis, investigations requested and management advised and initiated at the time of first evaluation should be prepared. Up-to-date medical record should be available at any given time [*see* IS 13808 (Part 3)].
e) Medical staff should visit the patient at regular interval and all the salient observations to be recorded in the patient's case sheet.
f) Behaviour of medical staff with patient and employees shall be communicative, sympathetic and courteous.
g) Continuous evaluation of patient's satisfaction, through exit opinion poll (*see* Annex A) and employees' interpersonal relationship shall be carried out.

7.8.6 *Nursing Care*

a) All the Nursing staff on duty should be physically available in the ICU round the clock.
b) All documentation including patient's consent shall be carried out as per hospital standard operative procedure. Freshly prepared bed shall be made available to the patient immediately on arrival in the ward but not later than 15 min. The patient shall be made comfortable.
c) Patient's clothing and the bed linen of the patient should be changed at least once daily. It will also be changed immediately whenever soiled or stained.
d) All the drugs to be given to the patient orally or parentally should be crosschecked and administered as per schedule and prescription of medical staff and proper record should be maintained.
e) Organization of diagnostic procedures, that is, timely and proper collection of samples for investigation, their transportation to respective laboratories, receiving and filing the reports in respective patient's medical record should be ensured.
f) Monitoring of vital parameters of the patient should be done routinely (that is at least 4 h) or as per medical advice. This shall be recorded simultaneously.

g) Monitoring of fluids, that is, record of I.V. fluid administration (wherever advised) and intake/output charts shall be maintained and properly recorded.
h) Basic nursing procedures should be ensured as per laid down standards.
j) Support service staff attached to the ICU should be properly scheduled and supervised. This should be monitored through duty rosters and staff movement records.
k) Behaviour of nursing staff should be courteous, helpful and sympathetic to patients' needs. Continuous evaluation of patient's satisfaction through exit opinion poll and employees' interpersonal relationship should be carried out.
m) Maintenance of nursing record as per standard protocol.

7.8.7 *Ancillary Care*

a) *Personal assistance to the patient* : Need based assistance to the patient should be given by appropriate staff and its evaluation should be done in exit-poll analysis.
b) *Transportation of patient to other service areas* : It should be safe, comfortable and timely. The nursing staff should monitor the patient's movement records and services received.
c) Security and safety of patients and staff should be ensured by hospital administration. The safety and security implies physical safety and safety of property of patient and hospital and it should be ensured as per laid down procedures.
d) *Storage and serviceability* : The provision for storage and serviceability of essential equipment and essential drugs should be done as per laid down procedures. It should be monitored as per the patient drug-administration record and service-record of equipment/ledgers.
e) Attitude of support care staff should be courteous, helpful and sympathetic to the patient's need.

7.9 Performance Parameters and Norms for Therapeutic Services

The therapeutic services of the hospital consist of facilities provided by operation theatre suite, delivery suite and physiotherapy. The performance parameters and norms for these services should ensure that the related technical and art of care are delivered in an effective, efficient and acceptable way. Concurrently, it will facilitate objectives of achieving quality patient and staff satisfaction consistent with professional standards and ethics. This will sequentially ensure provision of quality assurance and continuous quality improvement in these services. Quality assessment necessitates using a wide array of criteria and undertaking analysis at individual, departmental and organizational levels. Measurable performance indicators should be incorporated for monitoring, evaluation and improvement of the services.

7.9.1 *Operation Theatre Suite*

7.9.1.1 *Site planning*

OT should be planned so as to ensure:

a) avoidance of unrelated hospital traffic flow in the area.
b) convenient functional relationship and communication with surgical ward, ICU, CSSD, blood bank, X-Ray and pathology lab.
c) avoidance of outdoor source of noise.
d) provision for future expansion/alterations.
e) other parameters for location of OT should be as enumerated in IS12433 (Part 2).

7.9.1.2 *Area requirement and zoning*

The areas for the different components of the operation theatre suite, that is, the protective clean, sterile and disposal zones should be in consonance with Section 2 of IS 12433 (Part 1) and Section 3 of IS 12433 (Part 2). In order to ensure asepsis in surgical practice, OT suite should conform to the principles of zoning, namely, dirty, protective, clean and sterile areas. The traffic flow of patients, staff and supplies should be appropriately canalized in and out of the operation theatre suite. Contaminated material should be removed without passing through the protective, clean or sterile zones.

7.9.1.3 *Human resource development*

a) The manpower should be as recommended in IS 12433 (Part 2).
b) It must be ensured that the manpower has the requisite educational qualifications and skill. Personnel should be selected based on capability to satisfy defined job description. The staff should be encouraged to upgrade their knowledge and skill by taking part in seminars/workshops/conferences/continued medical education programmes. Scheduling of duties should be planned to ensure availability of manpower for scheduled and emergency contingencies. The work environment should foster excellence and a secure work relationship. The staff should be motivated to provide focused quality medical care with a human touch. The staff service should be communicative, courteous and prompt.

7.9.1.4 *Physical facilities*

Preparation room, pre-operative room, post-operative rooms, operation theatre, scrub and instrument sterilization rooms should be as per guidelines enlisted in

IS 12433 (Part 2). The important parameters which should be considered are as follows:

a) Corridors should not be less than 2.85 m in width.
b) Central air conditioning should ensure temperature range of 21 to 25°C, with 50 to 60 percent humidity levels. Positive pressure ventilation, low turbulence displacement air flow with minimum 15 to 20 air changes per hour and high efficiency particulate air (HEPA) filters should be incorporated.
c) The operation theatre should have *in-situ* mosaic finish for full height of walls.
d) The flooring should either be *in-situ* mosaic with least possible joints and copper strips to carry away any static electricity produced or of jointless conductive tiles.
e) The ceiling should be painted with washable paint and corners of the rooms should be rounded off to prevent collection of dirt and dust.
f) Taps in the scrub room should be knee/elbow operated.
g) Electrical wiring should be in concealed conduit. Lighting, both natural and artificial should be of appropriate illumination intensity and contrast. The OT table should have shadowsless flexible illumination system with capability of providing 60 000 to 15 000 0 lux and should have an independent battery system. All electrical points should be of the non sparking type and positioned above 6 feet height. A minimum of 8 multipurpose socket electric points should be available in each unit. Earthing facilities should be provided.
h) Facilities should exist for uninterrupted power supply (UPS) and voltage stabilization, power back up with provision of standby generating sets.
j) Doors should be of double action two leaf type/sliding and of minimum 1.2 m width in areas where patient movement is anticipated like operation theatre, pre- and post-operative rooms.
k) OT table and trolley to have facilities for Trendelenberg and reverse Trendelenberg position with side railings.
m) Auditory levels should be ensured in the range of 25 to 35 dB.
n) Communication system including patient information system. Facilities should exist for telephone communication within various rooms of the OT suite as well as with other departments of the hospital. Patients' relatives should be periodically informed about the patients' movement/progress in the OT suite.
p) Fire safety measures should include smoke detectors and automatic water sprinklers.
q) OT should have facilities for sterilization.
r) Essential pharmaceutical storage including refrigeration facilities should be available.
s) Waste disposal facilities should be available especially for bio-medical waste as per *Bio-Medical Waste (Management and Handling) Rules*, 1998. There should be an external exit in the disposal zone for conveyance of theatre refuge.
t) There should be a waiting area separately for pre- and post-operative patients. There should be a waiting room with toilet facilities for patient attendants.
u) Separate change rooms should be available for doctors, nurses and technicians with arrangements of lockers and toilet facilities.
v) There should be a minimum of 2 air, 2 oxygen, 2 suction outlets of Medical Gas Supply in each OT and also in pre- and post-operative areas.
w) Patient should be shifted out from post-operative room only on written instructions of Anesthetist/Surgeon along with post-operative notes.
y) There should be a Nurses Reception desk to overlook all entries and exit points as well as patient area.

7.9.1.5 *Equipment*

a) Equipment should be as per details given in IS 12433 (Part 2). In addition, provision of cardiac monitors and defibrillator should be ensured.
b) Annual maintenance contract (AMC) should be scientifically executed for all major equipment. Necessary clauses for preventive maintenance, 'Down-Time' specifications and penalty clauses for non-adherence to terms and conditions should be incorporated in the AMC.
c) The following indices should be calculated and analyzed for ensuring optimal utilization of equipment:
    1) Use-coefficient,
    2) Down-time index, and
    3) Break-even analysis.
d) The staff should be trained to properly handle and carry out preventive maintenance of the equipment.
e) There should be protocols and standing operative procedures (SOPs) to ensure availability, calibration, functionality as well as effective preventive and breakdown maintenance of equipment.

7.9.1.6 *Protocols and standing operating procedures*

There should be comprehensive and well-defined, specific and acceptable protocols for the operating systems. Standing operating procedures (SOPs) should be available for facilitating and ensuring actions in accordance with documented work instructions as per defined standards. The SOPs should be regularly reviewed and updated. The staff should be well versed with the SOPs. Comprehensive and up-to-date SOPs should be available for the following:

a) Operation theatre scheduling.
b) Reception and identification of patients. Handing and taking over of patients to and from the operation theatre.
c) Pre- and post-operative monitoring and management of patients including record of dental prosthetics, drug allergies, medication, blood grouping and transfusion.
d) Checklist for correctness of swabs, instruments used during operation.
e) Deaths in OT.
f) Sterilization indices, Re-sterilization of unused and sterilized packs.
g) Cleaning of OT, asepsis measures including fumigation.
h) Surveillance of OT for pathogens.
j) Equipment maintenance.
k) Handling of bio-medical waste including segregation, collection, transportation, storage treatment and disposal.
m) Maintenance of records.
n) Job specifications and responsibilities of various personnel, and
p) Role in disaster management.

7.9.1.7 *Records*

Records for the following must be meticulously maintained, analyzed and if required, remedial measures instituted for improvement.

a) Death in OT, anesthesia related deaths. Detailed investigative reports should be maintained for each case.
b) Workload, operation room utilization. Record of operations.
c) Fumigation and laboratory reports.
d) Records of temperature, pressure, holding time and random sampling of sterile items for culture.
e) Post-operative Infection Rate.
f) Staff absenteeism and turnover. Duty roster for staff.
g) Scheduling and waiting list for operations. Postponement of scheduled operations.
h) Patient and staff satisfaction. Complaints from patients, visitors and staff.
j) Pathology reports of surgical specimens.
k) Bio-medical waste disposal.
m) OT accident reporting.

7.9.2 *Delivery Suite Unit*

7.9.2.1 *Site planning*

The labour and delivery suites should be in as isolate a place in the hospital as practicable. This will ensure avoidance of non-related and unnecessary traffic through the suites and provide privacy to the patients. The facility should be in close proximity to nursery, obstetrical nursing unit, operation theatre and blood bank.

7.9.2.2 *Area requirement*

The area requirement and number of maternity beds should be in consonance with Section 2 of IS 12433 (Part 1) and Section 3 of IS 12433 (Part 2).

7.9.2.3 *Human resources development*

The medical and nursing manpower should be in consonance with IS 12433 (Part 2).

7.9.2.4 For enhancement of knowledge and skill and optimal utilization of manpower measures as enumerated in **7.9.1.3(b)** should be undertaken.

7.9.2.5 *Physical facilities*

The delivery suite unit should have facilities for reception and admission, examination and preparation room, labour room, delivery room, sterilization room, sterile store room, scrubbing room, dirty utility room, change room for doctors/nurses, pack preparation room, instrument and storage, recovery and Isolation rooms. These should be as per guidelines prescribed in Section 7 of IS 12433 (Part 2). The important parameters that should be considered are:

a) The registration counter should open into an entrance lobby.
b) The preparation room should have adequate facilities for bathing, enema and an examination table.
c) Labour rooms should have labour delivery bed with arrangements of stirrups, adequate lighting facilities for clinical examination. It should be sound proofed, width of the doors should be minimum 1.2 m to facilitate movement of stretchers. There should be provision for medical oxygen. There should also be an electronic foetal heart-recording machine, available.
d) Delivery room should cater for normal deliveries and caesareans. Sterility should be maintained as for operation theatres. It should have a designated area for new born babies with requisite resuscitative and emergency medical drugs and equipment like Ambu bag, suction apparatus and oxygen cylinders . Provision for piped suction air and oxygen supply should be made. Sinks with elbow or knee operated taps are essential and there should also be an emergency call system. A labour room should preferably be of 18 ft × 18 ft dimension. The floor should be conductive as for operation theatres. Placenta and dead foetuses alongwith other

bio-medical waste should be disposed as per *Bio-Medical Waste Management and Handling Rules,* 1998. The delivery room for caesarean sections should have facilities including sterility related as enumerated for that of Operation Theatres.

e) Recovery room should have facilities for medical gases and cabinets, as well as trolleys for medicine dispensing.
f) Sterilizing rooms, scrub-up room, dirty utility room and other facilities should be as enumerated in Section 7 of IS 12433 (Part 2) for delivery suite unit.
g) A waiting room for patient's attendants is also desirable.

7.9.2.6 *Equipment*

a) SOPs for optimal utilization of equipment, AMC and utilization indices should be as enumerated in 7.9.1.5(b) to 7.9.1.5(e).
b) Equipment should be as per details given in IS 12433 (Part 2). In addition, provision should be made for obstetric table, foetal heart monitor, cardiac monitor, Ambu bag, ET tube. Resuscitation equipment for the new born should also be available.

7.9.2.7 *SOP's*

7.9.2.7.1 SOPs should be available as enumerated for operation theatre suite. In addition, SOP should also be available for identification of babies including their sex. Use of wristbands and inedible ink should be made to avoid mix-ups and associated legal cases.

7.9.2.8 *Records*

Records for the following must be meticulously maintained and monitored:

a) Workload, labour and delivery room utilization.
b) Pre-term babies.
c) Labour/delivery/anesthesia related deaths. Detailed investigative reports should be maintained for each case.
d) Vehicle delivery cases.
e) Other applicable records as enumerated for OT suite.

7.9.3 *Physiotherapy Department*

The main objective of physiotherapy services is to facilitate patients achieve optimum functional physical capabilities by prevention, correction or alleviation of physical disabilities.

7.9.3.1 *Site planning*

The physiotherapy department should be sited to be conveniently accessible to indoor as well as outpatients. Parameters such as natural light, fresh air and privacy should be given due consideration. The department should preferably be situated on the ground floor.

7.9.3.2 *Functional areas*

a) These should include the reception area, hydrotherapy area (whirlpool/Hubbard tank), gymnasium, cubicle treatment area for electrotherapy, thermotherapy and massage therapy, waiting room, storage room, staff toilets. Toilet facilities for patients should be designed so as to be also accessible and usable by wheel chaired patients.
b) The functional areas should be in consonance as enumerated in Annex A of IS 12433 (Part 2).

7.9.3.3 *Physical facilities*

The physiotherapy services should provide facilities for electrotherapy, thermotherapy, hydrotherapy and gymnasium as per guidelines enumerated in IS 12433 (Part 2). The important parameters which should be considered are:

a) The department should be well ventilated with appropriate lighting facilities and providing cheerful and a relaxed environment.
b) The cubicles should provide privacy to patients. Provision of sliding doors/curtains should be suitable. Suitable stepping steps for patients accessibility to treatment table.
c) The cubicles should be spacious to provide enough space to physiotherapists to provide assistance to patients from either side of the tables and also for easy access for wheel chaired patients.
d) Movement of patients using wheel chair, crutches, walking sticks should be facilitated by provision of ramps, wall bars, appropriate toilet facilities and treatment cubicles.
e) Separate changing room for male and female patients.
f) Gymnasium should have non-slip, preferably wooden flooring.
g) Ceiling height should be minimum 12 feet to facilitate equipment installation.
h) Provision of wall mirrors should be made in the dressing cubicle and gymnasium area preferably of size 60 cm × 45 cm and 200 cm × 50 cm respectively.
j) A place for parking wheel chairs, trolleys and stretchers should be available.
k) Detailed record of patient's history, plan of treatment, follow-up and improvement should be maintained.
m) The floor and the side walls of the hydrotherapy pools should be non-skid type and ridged or studded. There should also be a provision for steps, hand rail and pipe rail above water level on long sides of tank.

7.9.3.4 *Human resource development*

- a) The manpower should be in consonance with IS 12433 (Part 2).
- b) For enhancement of knowledge, skill and optimal utilization of manpower measures as enumerated in **7.9.1.3**(b) should be undertaken.
- c) The staff should be able to effectively manage indoor and outdoor patients. Bedside physiotherapy should also be provisioned for.

7.9.3.5 *Equipment*

- a) Availability of equipment should be as per details given in IS 12433 (Part 2).
- b) SOPs, AMC, equipment utilization index and staff training should be as enumerated in **7.9.1.5**(b) to **7.9.1.5**(e).

7.10 Performance Norms in Hospital Services

7.10.1 *Kitchen (Dietary Services)*

7.10.1.1 The kitchen or dietary service department of a hospital has the responsibility of preparing and distributing nutritionally adequate meals for patients at a cost consistent with the policies of the hospital.

7.10.1.2 *Infrastructure with equipment and instruments*

- a) Infrastructure for kitchen should be in conformance with the norms given in Annex A of IS 12433 (Part 2), that is, 1.54 m²/bed. As far as infrastructure parameters are concerned, the following points are to be considered:
  - 1) The location should ensure that any noise or cooking odours emanating from the department do not cause any inconvenience to the other departments.
  - 2) Kitchen should preferably be located in the ground floor of the hospital.
  - 3) All the units of kitchen should be so placed that traffic flows in a straight line, that is, receiving, storage, daily stores, preparation, distribution and dish washing.
- b) Equipment, instruments and furniture required by this department should be in conformance with the norms given in Section 6 of IS 12433 (Part 2). In addition to the above equipment the following equipment may also be made available:
  - 1) Dish washer (optional);
  - 2) Dosa plate;
  - 3) Dough kneading machine;
  - 4) Egg beaters;
  - 5) Electric geyser;
  - 6) Fly catcher;
  - 7) Food boiler;
  - 8) Food trays;
  - 9) Garbage trolley;
  - 10) Grillers;
  - 11) Hot plate;
  - 12) Iron racks;
  - 13) Milk/tea urns;
  - 14) Mixer, grinder and juicer;
  - 15) Pressure cookers;
  - 16) Rice colander;
  - 17) Rice cooker – bulk;
  - 18) Steel drums;
  - 19) S.S. top work table with garbage chute and drawers;
  - 20) Thermos flask;
  - 21) Storage racks;
  - 22) Fly catcher;
  - 23) Water filters;
  - 24) Weighing machines for weighing up to 300 kg and 1 to 5 kg; and
  - 25) Work table with double sink.

7.10.1.3 *Physical facilities*

In physical planning of the kitchen, by and large, the following areas are to be provided:

- a) Receipt and storage of food and supplies:
  - 1) Receiving/Inspection area
    - i) Entrance of the receiving area should be located where the noise of vehicles will not disturb patients.
    - ii) A weighing scale (springless dial-faced platform scale) is essential in the receiving area.
  - 2) Storage area
    - i) A dry, well-ventilated and secured storeroom should be provided for non-perishable items like wheat, rice, pulses, sugar, oil, etc.
    - ii) This area should be big enough to hold bulk stocks for a fortnight to a month.
    - iii) An area for storing one or two day's supplies should be located near the food preparation area. This area can be used for storing vegetables.
    - iv) Refrigerated storage is required for perishable items like poultry, meat, dairy products, eggs, fruits, vegetables, etc. It should be centrally located for easy supervision and control.
    - v) Equipment store for vessels, utensils, machines, etc, that are not required for daily use.
- b) Normal and special diet kitchens with separate preparation and cooking areas:
  - 1) Preliminary preparation of food:
    This area should be located between the storage area and the cook's unit.
  - 2) Main food preparation unit:

  - i) The number of meals and the complexity of the menu can determine the type and capacity of equipment required for this unit.
  - ii) Equipment should be arranged in a direct line of traffic from the receiving area, through preparation, to the point of service.
  - iii) Approximately 4 feet of worktable space should be allowed for each preparation employee.
- 3) Special diet area:
  This area should be located next to the dietician's room for effective control.
- 4) Formula room:
  This may be part of a special diet kitchen, but should preferably be located adjacent to the nursery.

c) Wash-up area :
  - i) The washing room requires a three-compartment sink, one for pre-rinse and soaking, one for washing, both with water at 49-60°C and one for rinsing with water at 82°C. The sink should have splash back and grease traps.
  - ii) Facilities for sterilizing the food containers of the trolleys should be provided.
  - iii) Food containers and trolleys shall be parked in the trolley bay.
  - iv) Floor should be smooth, clean and in good condition preferably made of concrete, terrazzo or tile.
  - v) Floor drains should be provided with proper traps and so constructed as to minimize clogging and properly graded for drainage.

d) Miscellaneous rooms:
Rooms for dietician, office of kitchen, change room for kitchen staff, trolley parking area, toilets, etc, should be included.

e) All doors and windows should be fly proof.

f) All working surfaces should be provided with sufficient light.

7.10.1.4 *Human resources*

Manpower requirement in respect of kitchen staff should be as per Section 5 of IS 12433 (Part 2). The various types of staff to be provided in kitchen are dietician, steward, storekeeper, clerk/typist, cooks, bearers, masalchi and house-keeping staff.

7.10.1.5 *Quality parameters in dietary care services*

a) Dietician should be the overall in-charge of the department.
b) Food standards should be specified before making any purchase.
c) Dietician must work closely with the medical staff in preparing the patient's diet.
d) Dietician should be solely responsible for requisitioning food and dietary supplies.
e) There should be a clear cut laid down policy for purchase of food and supplies.
f) Responsible and reliable supervisory staff should be in the kitchen throughout the working hours that should be about 16 hours a day.
g) The service time should be fixed taking into consideration the traffic on floor and elevators.
h) The dietician should check the food in respect of its presentation, palatability and nutritional adequacy.
j) Responsibility should be fixed for the compilation of regular dietetic menus, modified or special diets and a therapeutic dietary manual.
k) Periodic and adequate health examination should be carried out of all the staff handling food and related goods at least once a year.
m) Regular cleaning schedules and periodic inspection of dietary equipment should be carried out.
n) Staff working in this department should be in uniform.
p) *See* also **7.8.3** of IS 15195 .

7.10.2 *Performance Parameters in Central Sterile Supply Department (CSSD)*

Central sterile supply department is an organized department where surgical equipment and allied materials including dressings and linen are sterilized centrally under specific conditions and strict quality control.

7.10.2.1 *Infrastructure with medical equipment and instruments*

a) Infrastructure for central sterile supply department should be in conformance with the norms given in Annex A of IS 12433 (Part 2), that is, 1.40 m^2/bed. As far as infrastructure parameters are concerned, the following points are to be considered:
  - 1) The location should be where the most rapid means of transportation of supplies and equipment is possible.
  - 2) This department should be located near the major users of CSSD, such as the Operation Theater, delivery suites, emergency department and ward units for easy accessibility.
  - 3) CSSD should have adequate supply of water (both hot and cold), steam, compressed air and electricity.

b) Equipment, instruments and furniture required by this department should be in conformance with the norms given in Section 6 of IS 12433 (Part 2). In addition to the above, equipment required are as under:
  - 1) Gauze cutting machine

2) Glove washing machine
3) Glove drying machine
4) Glove powdering machine
5) High speed instrument sterilizer
6) Hot air oven
7) Incubator
8) Arrangement for hot and cold water supply
9) Rolled steel tubular trolley
10) Stainless steel top worktable with under shelf
11) Stainless steel wire baskets
12) Storage racks
13) Washer disinfector
14) Water distillation unit/water plant
15) Water Softening Plant
16) Other items like furniture, sink, cupboards, waste unit, pack assembly bench, folding table, paper bags, containers, chairs, etc.

7.10.2.2 *Physical facilities*

In physical planning of the CSSD the following areas may to be provided:

a) *Receiving area* — This is the area for receipt of the used/dirty stores. About 3 percent of the total space is required for this area.
b) *Clean up/wash room* — This clean area is for cleaning, washing and decontamination of stores. About 7 percent of the total space is required for this area.
c) *Unsterile storage area* — This clean area requires about 15 per cent of the total area. It is used for unsterile bulk storage of supplies, equipment and equipment inspection and maintenance.
d) *Miscellaneous rooms* — Include gauze and dressing assembly area, area for linen, glove room, office of CSSD, change room for CSSD staff, trolley park area, toilets, etc. These rooms require about 12 percent of the total area. This is also a clean area.
e) *Area for syringe, needle and instrument processing* This section requires 12 percent of the total area. It is a clean area.
f) *Glove processing area* — requires about 5 percent of the total area. It is also a clean area.
g) *Clean work area* — for sorting, testing, inspecting, packaging and sterilizing. This is the area where autoclaves and sterilizers are housed. It requires 30 percent of the total area.
h) *Sterile area* – It includes sterile stores and issue counters and constitutes about 16 per cent of the total area.

7.10.2.3 *Human resources*

Manpower requirement in respect of technical and other staff should be as per Section 5 of IS 12433 (Part 2). The various types of staff to be provided in CSSD are CSSD technicians, CSSD attendants and messengers for wards/operation theaters/delivery suites, boiler attendant, clerks and house-keeping staff. As a rule of thumb one CSSD worker is required per 30 beds plus one supervisor.

7.10.2.4 *Quality parameters in CSSD*

a) All materials must be subjected to procedures ensuring sterility.
b) It is safe to consider all used articles as contaminated.
c) It is important that all steps are undertaken to avoid mixing up of contaminated and sterile articles at each stage – collection, storage, issue and transportation.
d) The system of packing sterile materials should be simple, easily understood by all users, clearly indicating what is sterile and what is not.
e) The pressure in the autoclaves must be steady all the time during sterilization. There has to be a proper coordination between pressure, temperature and holding time.
f) In CSSD practice of prescribed norms of sterilization is extremely essential. At a pressure of 32.5 lbs and temperature of 134°C, the holding time should be 3-5 minutes and; at a pressure of 17-20 lbs and 125°C of temperature, the holding time should be 20-30 min.
g) Clock record of every autoclave about time, temperature and holding time must be maintained on daily basis.
h) All items/packs/baskets are to be sterilized with proper numbering.
j) Use of heat sensitive indicator tapes with every load is essential.
k) Periodical bacteriological test should be conducted by placing culture tubes of *Bacillus Stearothermophilus*.
m) Random testing of samples of sterilized items for infection or contamination.
n) Shelf life of sterilized items should not be more than 72 h.
p) *See* also **7.8.1** of IS 15195.

7.10.3 *Performance Parameters in Hospital Laundry*

7.10.3.1 *Infrastructure with equipment and instruments*

a) Infrastructure for hospital laundry should be in conformance with the norms given in Annex A of IS 12433 (Part 2), that is, 1.54 m^2/bed. As far as infrastructure parameters are concerned, the following points are to be considered:
   1) The location should be convenient to the user units but preferably in the same building as the hospital.
   2) This department should have separate entrance and exit areas.

b) The equipment, instruments and furniture required by this department are as under:
   1) Air compressor
   2) Calendaring machine
   3) Dry linen trolley
   4) Drying tumbler (electrically heated)
   5) Linen rack with shelves
   6) Flat steam press pneumatic lifting
   7) Folding table
   8) Furniture and trolleys
   9) Hand iron with table
   10) Heavy duty ironing table
   11) Hydro extractor
   12) Water extractor
   13) Sluicing machine
   14) MS chimney
   15) Rolling shelf trolley
   16) Washing machine
   17) Sorting trolley
   18) Steam boiler
   19) Water Softening Plant
   20) Weighing machine of 250 kg
   21) Wet iron trolley
   22) Storage racks

7.10.3.2 *Physical facilities*

a) In physical planning of the Laundry services the following areas are to be provided:
   1) Reception
   2) Counting and weighing
   3) Sorting for repair and condemnation
   4) Sluicing of stained clothes
   5) Washing area
   6) Hydro extraction
   7) Drying
   8) Calendaring and pressing

b) Issues that need to be given due consideration while planning physical facilities are as under:
   1) Flooring should be smooth, non-slippery and water impervious.
   2) Walls should have smooth, washable surface and free from all unnecessary corners.
   3) Ceiling should be smooth and washable and should be high enough to allow for installation and repair of all equipment. The main laundry building should have a clear headroom of 14 feet.
   4) Doors should be wide enough to admit heavy machinery and trolleys.
   5) Ventilation should be adequate. Exhaust fans should be provided adequately. Recommended air changes are 10 per hour.
   6) Lighting should be adequate. Day light should be used whenever possible.
   7) Power supply should be adequate, that is, 220 or 440 volts, 3 phase and alternating current.
   8) The steam supply system must deliver steam to the equipment in the quantity and at the desired temperature, that is, 170°C with 100 Psi. All steam lines should be properly insulated.
   9) Uninterrupted water supply round the clock in adequate quantity is a must. For every kilogram of linen 15 litres of hot water and 10 litres of cold water is required. If hardness of water exists then water-softening plant should be installed.
   10) There should be provision of toilets, locker room and shower facilities.
   11) Sewing room should be provided near the clean linen area.
   12) Room should be provided for laundry manager's office. This room should be centrally located for effective supervision of the entire laundry operation.

7.10.3.3 *Human resources*

Manpower requirement should be as per Section 5 of IS 12433 (Part 2). One washer man/dhobi for about 60-75 kg of linen.

7.10.3.4 *Quality parameters in laundry*

a) All linen purchased for the hospital should be of good quality from approved firms only. Each type of linen should be chosen with regard to weave, tensile strength and colour.
b) Linen quality control : 1) any deficiency with regard to stains, holes, tears, dirty linen issued to wards should be brought to notice of laundry manager for remedial action; 2) ideally six sets of bed line per bed; minimum acceptable is four set per bed; frequency of change of linen has been omitted.
c) Centralized control of laundry services generally have better control over the laundry services.
d) It is important that all steps are undertaken to avoid mixing up of contaminated and sterile articles at each stage – collection, storage, issue and transportation.
e) The system of proper locking of stock room and restriction of number of persons having access to them.
f) The proper sealing of containers and bags during transit of linen from one area to another and system of receipt at each stage should be adhered to.
g) In laundry responsibility should be fixed to the staff holding the charge of linen.
h) There should be constant and positive supervision at all stages of linen circulation.
j) There should be regular physical verification to pinpoint the extent and type of loss with proper preventive action by the administration.
k) There should be regular condemnation of linen articles.

m) Various records in respect of all inventories should be properly maintained.
n) There should be proper security arrangements at all exits and the number of exits should be minimal.
p) *See* also **7.8.4** of IS 15195 .

7.10.4 *Performance Parameters in Stores*

For an effective functioning of stores, the following functions should be performed:

a) Demand estimation,
b) Procurement,
c) Receipt and inspection,
d) Storage,
e) Issue and use – Pharmacy,
f) Maintenance and repair,
g) Disposal, and
h) Accounting and information system.

7.10.4.1 *Infrastructure parameters*

The location of the Hospital supply system (Stores) should be such that it ensures an easy flow of supplies, has quick and easy access to the main road and promotes least expensive transport of supplies from source to user.

The criteria for store site selection are:

a) Easy accessibility to transport links,
b) Site well served by water and electricity,
c) Surrounding area should not be subject to flooding,
d) Unimpaired entry/exit for heavy load carrying vehicles with adequate parking,
e) Ample unloading/receiving area,
f) Area well secured from outside intrusions, and
g) Well connected communication facility.

7.10.4.1.1 *Building*

The store building should have:

a) Easy entry and exit points;
b) Ramp at entrance for easy movements of heavy items;
c) Adequate ventilation and good interval air circulation;
d) Optimum utilization of space by built-in shelves at different heights;
e) Easy maintenance of bulk supplies;
f) Systematic arrangements of stocks;
g) Provision of cold chain maintenance;
h) Secure storage area for controlled stocks like narcotics etc;
j) Protected fireproof storage area;
k) Provision of fire prevention measures like alarms and fire-fighting equipment;
m) Round the clock security by watchmen;
n) Generator supply;
p) Pest control measures should be undertaken at intervals;
q) Medical stores should be fully insured separately; and
r) Trolleys with wheels to be provided to transfer the stock to various departments.

7.10.4.2 *Process parameters for quality assurance of hospital supply system*

a) Types of stores items:
   Hospitals should have availability of the following three categories of stores:
   i) *Medical stores* — Drugs, vaccines and contraceptives, laboratory chemicals and kits
   ii) *Surgical stores (including instruments)* — Expandable and Non - Expandable
   iii) *General stores* — Stationery, Furniture, Linen and other items
b) Demand estimation:
   Availability of a committee to look into matters of preparation and time to time updating of hospitals drugs formulary. This should be prepared based upon review of the morbidity pattern and consumption rates of the items. Effort should be made to reduce variety of drugs limiting to the WHO list of essential drugs.
   This drug formulary should be readily available.
c) Procurement:
   1) All the procurement procedure to be done under the supervision of a committee (Store Purchase.)
   2) One of the Medical Officers should be made incharge of all the procurement procedures.
   3) All items to be procured should be from the formulary only.
   4) The demand for each item alongwith its quantity should be initiated by the respective user departments.
   5) Procurement of the items should be done as per the laid down rules of State/Central Government/concerned organization which may include
      i) Rate contract (Running and Fixed)
      ii) Tender system
      iii) Authorized agencies (like Cooperative stores)
      iv) Local and emergency spot purchases
   6) Maintenance of all the records and registers pertaining to procurement procedures
d) Receipt and inspection:
   Only the authorized person should receive the supply. On receipt of each item it should be inspected thoroughly, whether they are supplied as per the

specifications and having the mandatory Quality Control Certificate attached alongwith. The inspection should be done on the following lines:

i) Physical verification:
   1) Quantity and strength as per specifications of purchase order
   2) Physical appearance (colour, shape, consistency etc)
   3) Hardness and dispensability (for tablets)
   4) Turbidity or any suspended particles (for all injectables)

ii) Chemical analysis : for drugs
   10 percent of all the store items to be picked up at random and to be sent for chemical analysis to Government registered and authorized firms for certification. Reports should be received within 15 days. Drugs should be taken into stock after receiving the verification report.

e) Storage:
   1) *Store In-charge* — Stores should be maintained by proper authorized person(s) having sufficient experience and knowledge of store functioning.
   2) *Physical arrangements of stores* — proper guidelines of physical management of stores area to be followed, that is, space, lighting, ventilation, arrangement of racks, storage areas of items, fire controls, seepage control, pest control, temperature and humidity control (refer to BIS Guidelines for structural design). Graded temperature zone to be maintained for thermo labile and short life items.
   3) *Maintenance of registers/records pertaining to procurement, storage and distribution of items* As far as possible, records of the stores should be computerized. These registers are to be maintained very meticulously and supervised at a regular interval by the competent authorities. Out of these the following registers are must:
      i) Stock registers,
      ii) Expiry drug register, and
      iii) Narcotic drug register.
   4) *Conduction of physical verification of items* — This is to be done at regular interval and at least once in a year. Another officer who is not holding the charge of the store should do verification.
   5) Lead time should be known before hand and to be followed strictly so that there should not be any stock outs.
   6) *Reorder level of vital and essential items* — to be calculated properly so that it helps in timely procurement of these items.
   7) *Buffer Stock* — To be worked out properly for vital and essential items applying the Inventory Control techniques and to be followed strictly.

f) Issue and use:
   The items should be issued through indents principle of first in first out (FIFO). The stores should fix a schedule for its monthly indents to various departments. Any other requirements to be asked under supplementary indent.

   The quantity issued should be noted in the stock registers and available stock updated.

   Communication of fresh stocks and out of stock items to be sent to departments.

g) Condemnation and disposal of items:
   1) All non-consumable items including surgical and other instruments to be condemned through Condemnation Committee. This committee should meet at regular interval at least once in a year. For the expensive bio-equipment, the information for condemnation should be obtained from the history sheet/log book of respective equipment.
   2) Disposal of surplus : to be done under the supervision of the doctor in-charge and the senior pharmacist.
   3) Disposal to be done through
      i) Destruction, and
      ii) Auction.

7.10.4.3 *Accounting and information system*

An assessment of functioning and quality control can be carried out by checking of:

a) Percentage of time the items were available when asked for — availability index.
b) Delay on procurement of items, over and above the normal lead-time.
c) Number of items rejected after analysis or found sub-standard.
d) Delay in getting the results of chemical analysis.
e) Amount of items/drugs wasted/damaged due to pilferage, spoiled etc.
f) Number of times the stores were physically verified in a year.
g) Number of supplementary indents in a month.

7.10.4.4 *Manpower, furniture requirements and functional areas,* should be as per IS 12433 (Part 2).

7.10.5 *Performance Parameters in Mortuary*

Mortuary is the centralized agency to register all hospital deaths and to store all dead bodies before issue. It is here that autopsy in medico-legal deaths and pathological autopsies in deaths to ascertain the exact diagnosis are conducted. Dead bodies are preserved before disposal.

7.10.5.1 *Infrastructural facilities*

It should be located preferably on the ground floor at the rear end of a hospital preferably with at least one autopsy table and Cold storage area having temperatures less than 5°C and at least five cabinets for storing dead bodies. Adequate safety and security should be provided. Continuous running water is essential for mortuary hence provision of storage of water.

7.10.5.2 *Manpower requirements*

A doctor qualified in forensic sciences/trained or experienced in the area should man it.

7.10.5.3 *Performance requirements*

a) Written information to the mortuary should be sent as soon as possible but not later than 30 minutes of death, after completion of prescribed documentation like death certificate, death summary and identification bond.
b) Mortuary staff will report to ward immediately within 5 to 10 min to collect dead body after getting registration done on the register to receive dead body to mortuary.
    1) The body is issued to relatives immediately on demand for non-MLC cases or preserved in mortuary, if the relatives are not available. The body is preserved in mortuary for autopsy in MLC in appropriate cold storage cabinets.
    2) Autopsy is arranged within 30 min to 1 h on the same day in working hours on availability/submission of request papers by police and handing over the body within 30 min to 1 h after autopsy.
    3) Pathological autopsy should be conducted within 1 to 2 h of death in undiagnosed cases where death has occurred within 24 h of admission after seeking the consent of relatives and handing over the body to the relatives within one hour of autopsy.
    4) Disposal of unclaimed bodies should be done after 72 h or if required, beyond a specified period or as per the guidelines of a given hospital/ directives of government.
    5) Receipt of all dead bodies should be obtained on the prescribed records from the kith and kin of the deceased before body is issued to them in non-MLC cases and police in MLC cases respectively.

7.11 Performance Parameters in Engineering Services and Allied Services

The engineering services are an essential constituent in almost all facets of functioning of a hospital. The effectiveness and efficiency of the services are an important parameter in ensuring delivery of quality patient care in a safe and comfortable environment for patients, visitors, attendants and staff. The services are varied and comprise all facilities listed in Section 1, Group 4 of IS 12433 (Part 2). The design, construction, renovation, expansion and operational functionality should be in accordance with regulations/guidelines of Central Pollution Control Board, Indian National Building Code, Indian Standards and bye laws of local body.

7.11.1 *Manpower Requirements*

The manpower requirements should be in consonance with those enumerated at Section 5, clause 9 of IS 12433 (Part 2).

7.11.2 *Instruments, Equipment and Furniture Requirements*

These should be as per details given in Section 6 and Annex E of IS 12433 (Part 2).

7.11.3 *Building Requirements*

Hospital buildings should have the various departments placed in a functionally correct and operationally efficient manner. The building requirements including circulation areas, height of rooms, apertures for facilitating proper ventilation and light and sanitary fittings should be in consonance with Section 7 of IS 12433 (Part 2). The area requirements should be in accordance with Section 6 of IS 12433 (Part 2).

7.11.4 *Area Requirements for Electrical Services*

These should be as per Annex A and B of IS 12433 (Part 2).

7.11.5 *Maintenance*

An office-cum-store should be provided to handle day-to-day maintenance of the hospital building in accordance with Section 20, clause 20.9 of IS 12433 (Part 2).

Preventive and breakdown maintenance of all engineering and allied services including furniture, fixtures, lifts, trolleys, etc, should be ensured.

7.11.6 *Electrical Engineering*

The following should be ensured:

a) The sub-station and generating set should be in consonance with Section 20 of IS 12433 (Part 2).
b) Standby generators, voltage stabilizers and UPS (Uninterrupted power supply) should be appropriately provided to generate appropriate /additional/ emergency power requirements for critical and essential areas of the hospital such as operation theatre, labour room, radiology department, blood bank, cold/cool storage rooms of medical stores, lifts (if present).
c) Emergency portable lights units should be

provied in wards and departments to serve as alternative source of light in case of power failure.

d) Requirements for day lighting should be in accordance with IS 2440. Levels of illumination for various visual tasks should be in accordance with IS 4347.
e) Shadowless light in OT, delivery rooms and minor OT should be provided.
f) Call bells with switches for all beds and toilets with indicator lights and location indicator situated in the nurses duty room should be available.
g) Lightening protective system for hospital buildings should be in accordance with IS 2309. It should be totally independent and separate from the electric supply and distribution system.
h) Use of copper cables/FRLS (Fire Retardant Low Smoke), PVC cables, steel conduits, MCB (Miniature Circuit Breakers) are desirable.
j) Earthing for major equipment should be provided.
k) All electric installations should comply with the provisions of *Indian Electricity Rules*, 1956.
m) Provision should be made to cater for future expansion of hospital and enhanced power requirements.
n) Use of non-conventional energy devices such as solar energy must be explored.

7.11.7 *Ventilation*

The ventilation requirements including air changes per hour of various hospital areas should be in consonance with Section 20, clauses, **20.1.7** and **20.1.8** of IS 12433 (Part 2).

7.11.8 *Mechanical Engineering*

The following must be ensured.

7.11.8.1 *Air conditioning*

a) Air conditioning should at least be available for areas such as operation theatre, delivery rooms, ICU, blood bank, cold/cool storage of medical stores, and radiography/ultrasound rooms of Radio diagnosis department.
b) Periodical cleaning of air conditioning ducts and cleaning/replacements of filters must be done.

7.11.8.2 *Refrigeration*

a) Water coolers or hot air convectors may be provided to patients/staff depending upon local needs.
b) Water coolers and refrigerators should be available as per IS 1475 (Part 1) and 1474 respectively.

7.11.8.3 *Lifts*

The following should be ensured:

a) All hospitals with more than one storey should have lifts for vertical transportation of patients, staff, visitors and supplies.
b) Hospital should have passenger lifts, bed or stretcher lifts. These should have electric supply from standby generators as well. Lifts for transportation of goods are also desirable.
c) Lifts should be with automatic controls with safety devices but should also be provided with manual controls, which should be so placed as to be within reach of wheelchair borne patients.
d) Alarm system and emergency light should be battery operated. At least one lift in each separate section of the hospital should normally be connected to the standby generator.
e) Regular inspection should be done to conform to safety regulations.
f) Passenger lifts should be easily accessible and preferably located near staircases. Bed/stretcher lifts should be placed near the wards and operation theater department entrances.

7.11.9 *Public Health Engineering*

The following must be ensured.

7.11.9.1 *Water supply*

a) Water supply should be in accordance with clause **20.3.1** of IS 12433 (Part 2).
b) Laying and distribution of water supply system should be in accordance with IS 2065.
c) Design, construction and maintenance of drains for waste water, surface water, sub-soil water and sewerage should be in accordance with IS 1742.
d) Selection, installation and maintenance of sanitary appliances should be in accordance with IS 2064.
e) Design and installation of soil, waste and ventilating pipes should be as per IS 5329.
f) Waste disposal system should be in consonance with the guidelines of Central Pollution Control Board, Ministry of Environment and Forest.
g) Water tanks should be periodically cleaned and maintained.
h) Water pipelines should be periodically checked for signs of corrosions/leaks. Preventive/ breakdown maintenance should be appropriately carried out.
j) Provision of hot water requirements to wards, OT, delivery suites, ICU, laboratory, kitchen, laundry and other departments should be either by centralized supply system or through electric storage type water heaters (Geysers). Cold drinking water availability should also be ensured specially during summer months.
k) Incorporation of water harvesting methods and techniques is desirable.

7.11.9.2 *Public conveniences*

a) Public conveniences should be adequately provided for staff, visitors and patients. Patient convenience for inpatient nursing units should be in accordance with requirements enumerated in Section 15, clause **15.5.7** of IS 12433 (Part 2).
b) Organized, regular maintenance and cleaning of the sewer line should be done to avoid blockage, leakage and spillage.
c) Sewage discharge should be appropriately discharged into municipal lines/septic tanks. If required hospital sewage should be pre-treated to make it safe and in confirmation with the standards notified by *Environment Protection Act*.

7.11.10 *Waste Management*

These should be as per guidelines stated by central pollution control board (CPCB) and also **7.8.2.1** of IS 15195.

7.11.11 *Fire Protection*

The following should be ensured:

a) Availability of fire protection, dampeners in AC ducting and safety procedures and policies.
b) Fire protection regulation should be prominently displayed. Telephone numbers of those to be contacted in case of fire should be displayed and available with all concerned including patients, visitors and staff.
c) 'NO SMOKING' signboards are adequately and prominently displayed.
d) Proper upkeep of fire-fighting equipment, adequate First- Aid, fire-fighting equipment should be available, installed and functional in accordance with IS 2190.
e) Fire fighting drill should be carried out periodically.
f) Availability of manually operated fire alarm systems. Availability of automatic fire system in accordance with IS 2189 is also desirable.

7.11.12 *Horticulture and Landscaping*

A hospital should have pleasing surroundings, which present a welcoming appearance. The following should be ensured:

a) Master plan for horticulture and landscaping should be made;
b) Adequate, scientific and aesthetic plantation of trees and seasonal plants; and
c) Maintenance of gardens, hedges and lawns.

7.11.13 *Medical Gases*

The following should be ensured:

a) These should be provisioned in accordance with Section 20, clause **20.6** of IS 12433 (Part 2). Centralized gas supply system along with air and clinical vacuum delivery systems is desirable.
b) The centralized gas supply system pipeline should be away from all electrical cables and wires. Color coding should be in accordance with IS 2379.
c) Alarm devices should be present in the medical gases delivery system to monitor pressure and generate audiovisual alarms if required.
d) SOPs for operating, maintenance schedule, storage and change of cylinders should be formulated and implemented. Proper records should also be maintained.
e) Preventive/breakdown maintenance should be ensured timely.

7.11.14 *Workshop*

a) An electro-mechanical and bio-medical workshop should be available to cater to the preventive and breakdown maintenance of the equipment, fitments, furniture, machinery and instruments.
b) Adequate spares should be available for ensuring timely repair and maintenance.

7.12 Performance Parameters in Administrative/ Ancillary Services

7.12.1 *House-Keeping Services*

The main function of the house-keeping department is to maintain a hygienic clean, healthy environment of patients, visitors and staff. The services amongst other functions play an important role as a public relation variable and in preventing/controlling hospital acquired infection. Effective house-keeping services in a hospital should be ensured by:

a) regular and scheduled cleaning of the various hospital areas.
b) cleaning of the patient care and other areas of the hospital by appropriate methods, such as dusting, mopping, stain removing, scrubbing and vacuum cleaning.
c) incorporation of mechanized cleaning including machine scrubbing and cleaning in the hospital is desirable.
d) provision of adequate water supply, cleaning materials including brooms, mops, detergents, chemicals, stain removers, deodorants, etc.
e) the house-keeping staff must be trained for the following:
    1) Scientific maintenance of hygiene and sanitation in the hospital
    2) Role of house-keeping in prevention and control of Hospital Acquired Infection

   3) Role of house-keeping in Public Relations. The staff must be polite and courteous to the patients, their attendants and visitors.

f) Active supervision of the various activities of house-keeping including documentation and record keeping.
g) Appropriate protection and safety precautions for personnel handling the waste.

7.12.2 *Safety and Security Function*

The administration of the hospital should provide security to the staff, patients, visitors and attendants and also protection to the property and assets of the hospital and patients. The following should be ensured:

a) Fire safety procedures and the duties and responsibilities of staff in the event of a fire should be known to all concerned.
b) Display boards for fire safety guidelines including 'NO SMOKING' signs should be promptly put up at various places in the hospital.
c) Maintenance of fire-fighting equipment should be ensured.
d) Fire-fighting drill should be carried out periodically.
e) Measures for prevention of theft and pilferage.
f) Measures for information losses, such as medical records of patients. Computer information security should also be ensured.
g) Measures to prevent workplace violence, such as assaults on staff, patients and visitors.
h) Measures to avoid accidental/intentional swapping (e.g. of new borns and dead bodies).

7.12.3 *Ambulance Services*

Scientifically designed, appropriately equipped and staffed ambulances are an effective means of transportation of the sick and injured. The following should be ensured in Ambulances Services of the hospital:

a) *Number of ambulances* — The minimal desirable number of ambulances in a 100-bedded hospital should be 2 to 3.
b) *Manpower* — Each ambulance should have trained driver and stretcher bearer in all shifts of duty to call for 24 h available and should be given training in First Aid besides both should be trained in Cardio Pulmonary Resuscitation.
c) *Equipment* — The following basic equipments should be available in all Ambulances:
   1) Portable suction apparatus with wide basic tubing and rigid pharyngeal suction tip.
   2) Hand operated bag mask ventilation unit (Ambu bag) with mask of all sizes.
   3) Oropharyngeal airways – all sizes.
   4) Mouth to mouth artificial ventilation airways – adults and children.
   5) Portable oxygen equipment.
   6) Mouth gags.
   7) Sterile intravenous infusions (plastic bags with administration kit).
   8) Universal dressings, sterile gauze packs.
   9) Bandages of all types.
   10) Sterile burn sheets (two).
   11) Traction splints.
   12) Padded splints assorted.
   13) Spine boards.
   14) Safety pins.
   15) Sterile obstetrical kit.
   16) BP instrument and stethoscope.
   17) Two-way communication system.
d) It is desirable to have appropriately trained manpower and equipment, such as ECG monitoring equipment, defibrillator and portable respirator in the ambulances.

7.12.4 *Medical Records*

Medical records section should function for professional work in diagnosis, treatment and care of patients. The area requirements for this section should be as per Annex A of IS 12433 (Part 2).

8 APPLICATION OF STATISTICAL METHODS

Modern statistical methods can assist in most aspects of data collection and application, whether it be to gain a better understanding of customer needs, in-process control, capability study, forecasting, measurement of quality to assist in making decisions or continuous improvement in quality of service.

Few examples are given below:

a) Seven basic tools of quality management (*see* IS 15431) can be applied, for example, if a patient does not respond to a particular line of treatment, a team of doctors could carry out a cause-and-effect analysis of the problem and work out a more effective treatment instead of relying on experimentation or intuition or expertise of one doctor.
b) Trend charts can be prepared for average time required to cure a disease to see any continuous improvement; number of patients treated per month.
c) Quality Function Deployment (*see* IS 15280) methodology can be used as a performance measurement tool.

ANNEX A

(*Clauses* 7.7.3, 7.7.4, 7.7.5 *and* 7.8.5)

EXIT INTERVIEW PROFORMA

You may kindly express your frank and honest opinion regarding the experience you had for availing services from this hospital.

Scale in : Excellent (5) Very Good (4) Good (3) Average (2) Poor (1)

1 Reception and Registration

a) Promptness in answering questions
b) Courtesy and politeness
c) Well-informed/explained replies
d) Promptness in service

2 Waiting Area

a) General condition and cleanliness
b) Sitting arrangement
c) Toilets
d) Drinking water

3 Doctors

a) Accessibility
b) Courteous and sympathetic attitude
c) Listened and explained properly
d) Punctuality/availability
e) Helpful with querries

4 Pharmacy Services

a) Promptness in service
b) Explanation of prescription
c) Helpful and well informed replies
d) Availability/quality of medicines

5 Diagnostic Services

a) Courtesy and politeness
b) Explanation of procedures
c) Helpful in answering

6 Admission and Registration

a) Courtesy and politeness
b) Explanation of procedures/forms
c) Promptness in admission process

7 Indoor Services

a) Cleanliness of room
b) Cleanliness and maintenance of toilets
c) Quickness
d) Condition of bed and linen
e) General comfort
f) Availability of medicines

8 Nursing Services

a) Courtesy and sympathetic attitude
b) Smiling and pleasant when spoken to
c) Promptness when called
d) Punctuality in giving medicine, injection, etc
e) Competence

9 Dietary Services

a) Timely services
b) Palatability

10 Allied Health Professionals

a) Ward boy
b) Dressers
c) Physiotherapist
d) Medico-social worker
e) Safai karamchari

11 Ancillary Services

a) House-keeping
b) Security
c) Water
d) Electricity
e) Maintenance

12 Discharge Procedures

a) Promptness in discharge process
b) Directions about home care

13 Additional Comments/Suggestions

14 Overall Rating

15 Identity of the Patient (Optional)

a) Name:
b) Age/Sex:
c) C.R. No.:
d) Address:
e) Signature:

ANNEX B

(*Clauses* 7.7.4, 7.8.6 and 7.10.5.3)

INFORMED AND SPECIAL CONSENT FORM

C.R.NO./O.P.D. NO. ________________________________

Name __________________ Sex __________________ Age __________

Son/Daughter/Wife of ____

Address ____

____

Insured Consent

Authorization for Medical Treatment, Administration of Anesthesia and performance of Surgical Operation and/or Diagnostic/ Therapeutic Procedure.

1. I hereby authorize ________________________________ hospital to perform upon __________________________ the following medical treatment/surgical operation and/or diagnostic/therapeutic procedures ________________________________

2. It has been explained to me that, during the course of the operation/procedure, unforeseen conditions may be revealed or encountered which necessitate surgical or other emergency procedures in addition to or different from those contemplated at the time of initial diagnosis. I therefore, further authorize the above designated medical official to perform such additional surgical or other procedures as they deem necessary or desirable.

3. I consent to the administration of a anesthesia and to use such anesthetics as may be deemed necessary or desirable, except to the following exceptions:

(Indicate exception or 'None')

4. I state that I am/am not suffering from Hypertension/Diabetes/Bleeding disorders/heart diseases or ____________________________.

5. I also state that I am not suffering from any known allergies or drug reactions.

6. I further consent to the administration of such drugs, infusions, plasma or blood transfusions or any other treatment or procedures deemed necessary.

7. The nature and purpose of the operation and/or procedures, the necessity, thereof, the possible alternative methods, treatment, prognosis, the risks involved and the possibility of complications in the investigative procedures/ investigations and treatment of my condition/diagnosis have been fully explained to me and I understand the same.

8. I have been given an opportunity to ask all/any questions and I have also been given option to ask for any second opinion.

9. I acknowledge that no guarantee and promises has been made to me concerning the result of any procedure/ treatment.

10. I consent to the photographing or televising of the operations of procedures to be performed, including appropriate portions of my body, for medical, scientific or educational purposes, provided my identity is not revealed by the pictures or by descriptive texts accompanying them.

11. For the purpose of advancing medical education, I hereby give consent to the admittance of observers to the operating room.

12. I also give consent to the disposal by hospital authorities of any tissues or parts which may be removed during the course of operative procedure/treatment.

I certify that the statements made in the above consent letter have been read over and explained to me in the language I understand and I have fully understood the implications of the above consent and further submit that statements therein referred to were filled in and any inapplicable paragraphs stricken off before I signed/put my thumb impression.

Signature of patient/Thumb impression

Date

Name

Signature, names and address of the witnesses:

1. ______________________________
____

2. ______________________________
____

When patient is a minor or unable to affix signature due to mental or physical disability.

Signature/Thumb impression of natural guardian/guardian

Name and relationship with patient

Signature, names and address of witnesses:

1. ______________________________
____

2. ______________________________
____

I confirm that I have explained the nature and effects of the operation/treatment to the person who has signed the above consent form.

Signature of Doctor-in-Charge

Name

Date

Designation

ANNEX C

(*Foreword, and Clause* 5.5)

A MODEL CITIZENS' CHARTER FOR PUBLIC HOSPITALS

Name of Hospital ____________________

Address ____________________

Telephone No. ____________________

C-1 PREAMBLE

This charter is an expression of the commitment and resolve of this hospital to provide to its patients information about the services that are available, the quality and standards of service that they may expect , as also the machinery and procedure available for redressal of their grievances and complaint.

C-2 GENERAL INFORMATION

C-2.1 Hours of Work

Out Patient Deptt. :

Morning .... A.M. to ....

Evening .... P.M. to ....

Administrative Office

Week days .... A.M. to ....

Lunch Break .... A.M. to .... P.M.

Saturdays .... A.M. to .... P.M.

Closed on Sundays and Gazetted Holidays

Causality/Emergency/Deptt. : Open throughout 24 h on all days

Resident Medical Officer : Available throughout 24 h on all days

Duty Doctor : Every Department connected with Casualty/ Emergency will have a minimum of one duty doctor available for 24 hours.

Specialist : .... A.M. to .... P.M on ....
Week days .... A.M. to .... P.M
Lunch Break .... A.M. to .... P.M.
Saturdays .... A.M. to .... P.M.

Closed on Sundays and Gazetted Holidays

C-2.2 Other Facilities

a) The list of doctors on duty, the names of Resident Medical Officer, Medical Supdt., Heads of Different Departments, along with their location and telephone numbers etc., is displayed at the Reception.
b) Wheel chairs and stretchers are available on request at the gate/reception for facility of patients who are not in a position to walk. Walkways/lifts are also available for access to higher floors.
c) A location map is on display at the Reception for easy access to various departments by the patients.
d) Every staff in this hospital can be identified by their uniform and name badge.
e) Information regarding the fees and other payments if any to be made for use of the various facilities/ diagnostic and other machines and equipment and/ or for specialists fees/medicines etc, are also displayed at the Reception. For every payment a properly authenticated official receipt will be given.
f) Adequate drinking water and toilet facilities are available for the convenience of the public.
g) Adequate display boards are available at different locations for guidance of visitors and outpatients.

h) Ambulances/Mortuary Vans are available for use on payment throughout 24 h.
j) There is a laboratory available in the hospital premises for various tests.
k) There is a standby generator to cater to Emergency services in case of general breakdown of electricity.
m) Public telephone booths are available at various locations in the hospital.
n) A canteen is available for catering to visitors and outpatients during normal working hours.
p) A chemist shop is located in the hospital premises, which is open 24 hours on all days.

C-3 SERVICE STANDARD

This hospital has
.... Doctors
.... Nurses

.... Beds

C-3.1 Standards of service and adequate degree of patient care can be provided to the extent proper and workable ratio between doctor to patient, nurses to patient and beds to patients are maintained, as also the extent of availability of resources and facilities. Consistent with this every possible effort will be made by this hospital:

a) to provide access to hospital and professional medical care to all patients who visit the hospital.
b) to prescribe a workable maximum waiting time for outpatients, before they are attended to by a qualified doctor and/or specialists and continuously strive to improve upon it.
c) to ensure that all equipment in the hospital are maintained efficiently in proper working order.
d) to ensure availability of beds and operation theatres facilities as freely as possible.
e) to ensure treatment of emergency cases with utmost promptitude and attention.

C-3.2 Every outpatient seeking treatment at the hospital will be registered and issued a card for recording various details of the symptoms, diagnosis and treatment being provided. Efforts will be made to computerize the record system in the hospital, to provide better service to the patients.

C-3.3 The patients' right to privacy, dignity, religious and cultural beliefs, as also their right to be informed, right to consultation and choice shall be respected.

C-3.4 No patient shall be treated or examined without his/her consent or the consent of the guardian in the case of minor and the consent of the legal heir in the case of a patient who is unconscious or otherwise unable to express himself. If a legal heir is not available, but a medical intervention is urgently needed and delay is dangerous, the doctor shall be entitled to carry out necessary treatment or operation without such consent.

C-3.5 No patient shall be used for any research or experiment without a written consent and without being informed of the potential hazards or discomforts involved.

C-3.6 All patients and visitors to the hospital will receive courteous and prompt attention from the staff and officials of the hospital in the use of its various services.

C-3.7 Qualified pharmacists shall handle drugs and ensure proper potency and quality of the drug. Every effort will be made to ensure adequate availability of drugs especially those which are life saving. The Pharmacy will display information regarding non-availability of any drug and how long they are likely to remain non-available.

C-3.8 Reliability and promptness of laboratory results will be ensured and whenever possible such reports will be made available within 8 hours.

C-3.9 Operation theatre shall be maintained on a regular basis to ensure that they are serviceable all the time and every effort will be made to keep the hospital and its surroundings, clean, infection-free and hygienic.

C-3.10 A regular system of obtaining feedback from the users will also be initiated through, periodic surveys for constantly improving the quality of service standards.

C-4 EQUIPMENT AND FACILITIES/SERVICES AVAILABLE

C-4.1 This hospital has the following services available : X-Ray machines, Testing laboratory, Ultra sound, Cat scan, ECL, EEG and Oxygen pipe in every room in Intensive Care Unit, centralized air-conditioned timing in ICU, 24 hour duty nurses for ICU, Physiotherapy equipment .... etc. ....).

C-4.2 The hospital has its own Electrical and Mechanical units for ensuring proper maintenance and working of the various equipments.

C-4.3 If any equipment is out of order, information regarding the same shall be displayed suitably indicating the alternate arrangements, if any, as also the likely date of recommissioning the equipment after repairs and replacement.

C-5 WHEN THINGS GO WRONG OR FAIL

C-5.1 Appropriate action will be taken on those responsible for such failures and action taken to rectify the deficiencies. Complainants will also be informed of the action taken.

C-5.2 In case of likely persistence of the deficiency, the reasons for the delay in rectifying the deficiency and the time likely to be taken for rectifying the same, will be displayed prominently for the information of the public.

C-5.3 Special directions would be given to the non-medical staff to deal with the patients and public courteously. Any breach in this regard when brought to the notice of the hospital authorities shall be dealt with appropriately.

C-5.4 The hospital encourages the patients and the public to inform the authorities when things go wrong. Suggestions/complaints boxes are provided at the Reception, Canteen and the RMO's Office. Also complaint forms with serial numbers and tear off counter foils are available at the Reception.

C-5.5 Weekly review meetings will be held of all Heads of Departments, to look into performance reports, grievances/complaints and their redressal, non-functioning of equipment, delays in repair, maintenance/replacement of equipment identification of deficiencies etc, and time bound action taken for improving performance.

C-6 GRIEVANCES/COMPLAINTS/REDRESSAL

C-6.1 There will be a designated Medical Officer whose name, location and telephone number is duly displayed at the Reception and elsewhere in the hospital for receiving and attending to all grievances and complaints. Every grievance/complaint will be acknowledged immediately and dealt with finally within 7 working days.

C-6.2 Every patient/visitor shall have the right to be heard regarding his/her grievance/complaint.

C-6.3 If the complainant is not satisfied with the disposal of his grievance/complaint, he can approach to the Head of the Hospital and thereafter the Hospital Advisory Committee.

C-6.4 A Hospital Advisory Committee consisting of the Head of the Hospital, the Heads of Departments/Wings of the hospital, officials in-charge of the maintenance of hospital building, electrical systems and various equipment, representatives of consumers organizations, local MLAs/MPs etc, will be constituted to review periodically the overall performance of the hospital in terms of patient care and treatment as also redressal of grievances and complaints. The names, addresses and telephone numbers of the members of the Advisory Committee are displayed at the Reception.

C-7 RESPONSIBILITIES OF THE USERS

C-7.1 Users of the hospital are entitled to demand adherence of all concerned to the Charter Principles as indicated above and bring any shortcomings or deficiencies to the notice of the appropriate authorities.

C-7.2 Users should appreciate the various constraints under which the hospital is functioning and ensure its smooth functioning without inconveniencing other patients and visitors.

C-7.3 They should help the hospital authorities in keeping the hospital and its surroundings clean and in proper sanitary condition.

C-7.4 Provide useful feedback and constructive suggestions regarding the quality and extent of service available at the hospital.

C-7.5 Refrain from misusing the facilities available or demanding an undue favour from the staff and officials.

C-8 SUGGESTION FOR IMPROVEMENT

Any suggestion for improvement of this charter document will be most welcome and may be addressed to:

....
....
....

ANNEX D

(Foreword)

COMMITTEE COMPOSITION

Hospital and Medical Care Services Sectional Committee, MSD 8

Organization	*Representative(s)*
Safdarjung Hospital, New Delhi	Dr V. H. Talib ***(Chairman)*** Dr Arvind Theogaonkar *(Alternate)*
Academy of Hospital and Administration, Delhi	Surg Capt (Dr) N. A. Khan
Air Headquarters, New Delhi	Wg Cdr S. K. Tahiliani Wg Cdr A. Sharma *(Alternate)*
All India Institute of Medical Sciences, New Delhi	Dr R. K. Sharma Dr D. K. Sharma *(Alternate)*
All India Occupational Therapists' Association, New Delhi	Dr R. K. Sharma Dr Anil Srivastava *(Alternate)*
Armed Forces Medical College (Department of Hospital Administration), Pune	Col M. Dayananda
Artificial Limbs Manufacturing Corporation of India, Kanpur	Shri R. P. Sharma Shri M. C. Dubey *(Alternate)*
B.M. Birla Heart Research Centre, Kolkata	Shri Amit De
Batra Hospital & Medical Research Centre, NewDelhi	Dr M. P. Vaidya Shri V. N. Seth *(Alternate)*
Cauvery Medical Centre, Bangalore	Dr G. D. Kunders
Christian Medical College and Hospital, Vellore	Dr Selvakumar Dr Anand Job *(Alternate)*
Commissionerate of Health, Medical Services and Medical Education, Gandhi Nagar	Dr K. C. Mehta
Department of Health & Family Welfare, Govt. of Sikkim, Gangtok	Dr D. K. Subba Dr S. K. Pradhan *(Alternate)*
Department of Health & Family Welfare (Delhi Administration), Delhi	Dr V. P. Varshney Dr Yogesh Choudhary *(Alternate)*
DGAFMS, Ministry of Defence, New Delhi	Col H. S. Guleria Lt Col S. C. Acharaya *(Alternate)*
Directorate General of Health Services, New Delhi	Shri J. Choudhary
Directorate of Health Services, Chandigarh	Director
Directorate of Health Services, Delhi	Dr R. N. Baishya Dr Ramesh Chugh *(Alternate I)* Dr J. N. Mohanty *(Alternate II)*
Directorate of Health Services, Gandhi Nagar	Director
Directorate of Health Services, Mumbai	Dr Subhash R. Salunkee Dr L. B. Khotkar *(Alternate I)* Dr V. D. Male *(Alternate II)*
Employees State Insurance Corporation Ltd (ESIC), New Delhi	Dr D. K. Kapoor Dr (Smt) Nalini Tandon *(Alternate)*
Engineer-in-Chief's Branch, Army Headquarters, New Delhi	Shri M. D. Khera Smt Mala Mohan *(Alternate)*

Organization	*Representative(s)*
Escorts Heart Institute & Research Centre (EHIRC), New Delhi	Dr (Smt) Anita Arora
Health & Family Welfare Division, Planning Commission, New Delhi	Dr (Smt) Ambujam Nair Kapoor
Holy Family Hospital, New Delhi	Shri Edward David
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